Volunteer Firemen

NOVEMBER 1945

NATIONAL FIRE PROTECTION ASSOCIATION
INTERNATIONAL
60 Batterymarch Street Boston 10, Massachusetts

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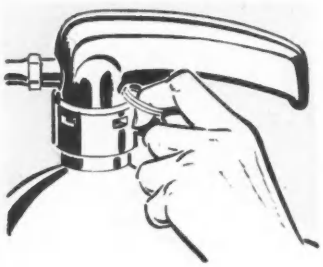
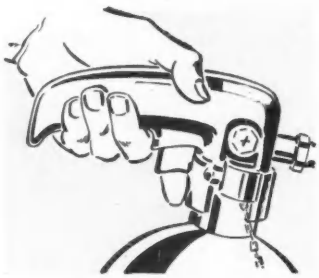
Here's the HOW . . . and the WHY of
TRIGGER-FINGER CONTROL

(Soon available on 10, 15 and 20-lb. Fire Extinguishers)

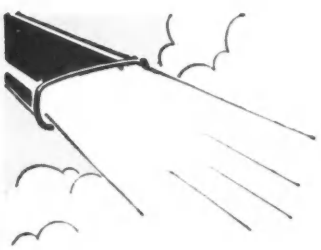


1. Pull out non-jamming locking pin. Seating in two blind holes, it can't be turned . . . the ends cannot get bent over.

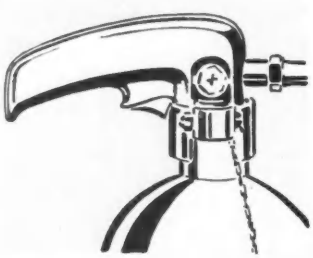


2. Pick up easy-to-carry extinguisher. Balanced design and low center of gravity make carrying job simpler.

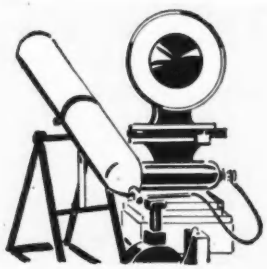
3. Press the trigger. That's the simple, *natural* way to operate extinguisher — one finger does the trick.



4. Get full flow at once. No half-way measures with this fast-starting valve . . . carbon dioxide goes right to work!



5. Lock open—if desired. Just move trigger forward slightly to latch it in open position—no danger of fouling.



6. Recharge without replacement parts. Merely connect carbon dioxide supply and fill extinguisher up.

Simple, safe and foolproof, this new trigger-control valve on 10, 15 and 20-lb. Kidde extinguishers speeds the attack on fires. A novice can operate it! Write for the full details today.

Walter Kidde & Company, Inc., 1156 Main Street, Belleville 9, New Jersey

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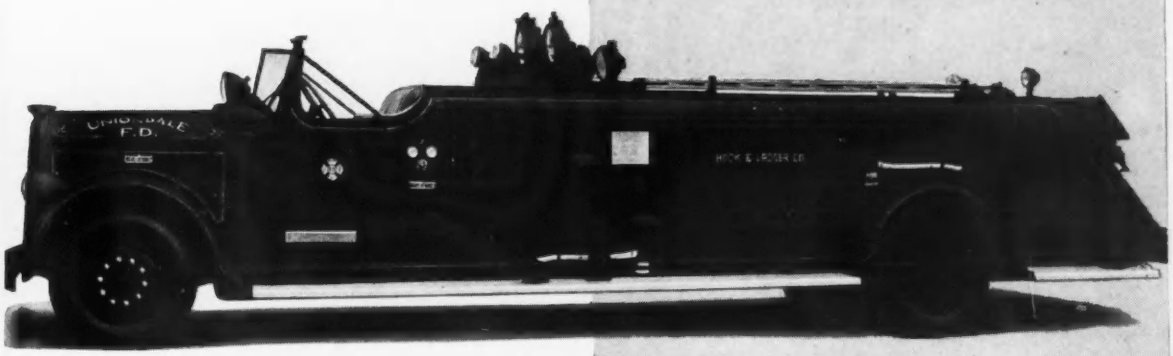
for Uniondale, L.I.



Ward LaFrance Quadruple truck recently delivered to Uniondale, L. I.

ENGINE: 6 Cylinder Ward LaFrance
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OVERALL LENGTH: 31 ft. 3 in.
HOSE CAPACITY: 800 ft. 2½ in. D.J. Fire Hose
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BOOSTER TANK: 100 gals.

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Every Ward LaFrance is designed and built on the principle that the *best* pumper is the one that will put an effective stream into play in the fewest minutes after the alarm is registered. And the best pumper for one community is not necessarily the best for another because of differences of grades, types of buildings, limits of city mains and many other factors.

Ward LaFrance offers three guarantees that the equipment you purchase will be ideal for the protection of your community.

1. **BETTER BASIC FEATURES** which go into every piece of apparatus . . . like the heavy-duty, quick starting 6 cylinder Ward LaFrance engine, which provides plenty of reserve power.

2. **A COMPLETE LINE** of Triples and Quadruples assuring the proper equipment without extensive and expensive modifications.

3. **SOUND ENGINEERING COUNSEL.** Over twenty-five years of practical experience in interpreting the individual requirements of both large and small communities.

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WARD LaFRANCE TRUCK DIVISION

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The spread of flames is accelerated by a Delayed Alarm — the attendant costs involve interruption of business and income — and frequently human life.

More than 1,000 communities with volunteer fire departments are now protected by Gamewell Fire Alarm Systems. A few boxes, properly distributed, will materially strengthen the fire defenses.

The Diaphone horn with coded signals saves time by directing the firemen to the scene of fire — or the boxes may be arranged to operate your existing public alarm.

DIAPHONE HORN
Operated by Compressed Air
The Circuit is shown connected with the Electric Control Valve.

Include In Your Post-War Plans
An Adequate
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Write for new Booklet
"It Can Happen Here"

GAMEWELL FIRE ALARM BOXES
Connected In Series
In Closed Metallic Circuit

110 VOLT A.C.

GAMEWELL CONTROL UNIT
VITAGUARD SYSTEM

With Self-Winding Register — Manual Transmitter for Sounding Alarms Received By Telephone — Control Switches — Test Switches and Instruments — Batteries, Rectifiers and Line Terminals Mounted Within the Cabinet.

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Newton Upper Falls, Massachusetts
In Canada — NORTHERN ELECTRIC CO., LTD. — Montreal

Volunteer Firemen

VOLUME 12 NUMBER 11

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THE VOLUNTEER FIREMAN

"Water, water, everywhere,
And not a drop—" on the fire!

THE cover picture this month, by Gardner Roberts of Portland, Maine, illustrates the fact that fire and water can sometimes get along very well as near neighbors, unless man has exercised sufficient foresight to apply the water against an unfriendly fire. Structures over water are often extremely inaccessible to fire fighters. Even where there is a fireboat available, the water may not be deep enough to permit such a craft to approach.

As in most types of fires the best solution to the fire protection problem is to apply the water in advance by installing a system of automatic sprinklers. Fire bulkheads and draft curtains under piers are also important features.

WITH these days of labor unrest that so naturally follow the easing of restrictive controls following the world's greatest war, we are reminded again of the fact that firemen do not strike. The charter of the International Fire Fighters Association, A. F. of L., recognizes that fire fighters have a public safety responsibility that often makes them place their personal welfare second when they have a point of controversy with their employer — the public.

However, there are many ways in which strikes and other forms of labor unrest can and do affect fire protection. In recent weeks there was a short demonstration walkout by long distance telephone operators. A few months back many telephone operators in Ohio were out on strike. This again serves to emphasize the importance of having a reliable fire alarm system in each community that is under the control and operation of the protective forces. A telephone is not designed as an emergency instrument. If lives of our citizens are lost because of failure of the telephone facility, who will be responsible?

Modern fire alarm systems following the standards of the National Fire Protection Association are designed to operate under emergency conditions "come hell or high water." They give an immediate and accurate report on the location of a fire without the error and confusion so often attendant upon verbal fire reporting. Fire alarm systems are designed and available to meet the needs of every type of community. No locality can consider itself well protected against fire when it merely relies upon telephone alarm service that is not backed up by accurate fire alarm system reporting.

Many fire departments are finding that two-way radio facilities are one of the greatest improvements in the fire service since the introduction of motor fire apparatus. The advantages of radio equipment are too numerous to be catalogued here. However, even the radio cannot take the place of an approved fire alarm system and certainly does not have the reliability built in to the fire alarm system through some ninety years of experience. Radio waves fade, they are subject to weather conditions, sun spots, electrical interference. There are numerous dead spots where calls are not clear or fade out completely. Radio systems get off frequency or have to go off the air for repairs. Every fire department should strive to have the best two-way radio equipment that its resources can provide, but no equipment has been found to replace the fire alarm telegraph system for certainty, promptness, and accuracy in reporting fires.

As each fire company makes its post-war plans, it should consult a reliable manufacturer of fire alarm telegraph equipment regarding the advantages of making an adequate fire alarm installation for the community. Fires will not wait, and delayed alarms continue to be the leading cause of large loss fires.

THE United States fire loss for September was $32,447,000, according to the National Board of Fire Underwriters.

Fire losses for the twelve months ending last September reached $448,602,000, as compared with $417,948,000 for the same period, September 1944.

Canadian fire losses for the month of September totaled $5,773,000, according to the *Monetary Times*.

FIRE SAFETY IN THE OAK RIDGE SCHOOLS

No fear of fire tragedy in atomic boom town schools

by L. L. KELLY, JR.
Community Safety Engineer, U. S. Engineer Office
Oak Ridge, Tenn.

AS the home of the atomic bomb, much has been written about Oak Ridge, Tenn. One hitherto unpublicized feature of life in this town, literally perched on the side of a volcano, is its school system. The educational program in Oak Ridge has progressed from nothing (and absolutely nothing) to a first class system of a high school, junior high, and ten elementary schools in a little over two years. Approximately 9,000 students are enrolled.

Much of the credit for keeping the schools abreast of the town's wartime population influx is due to Dr. A. H. Blankenship, superintendent.

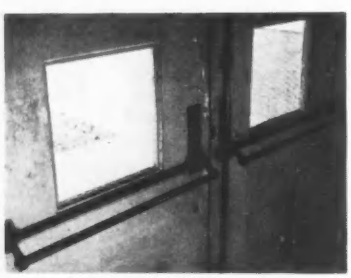
Accomplishments which have been achieved along with the fine academic standards are modern, up-to-date school design and operation. The stress is not only on the ultimate in efficiency but on safety as well.

A particular feature of the school system is fire safety. This consists of a comprehensive fire prevention and fire protection program which is standard throughout the entire system. The need for this program is apparent, not only because of the type of institution and its location, but because of the fact that, due to material shortages, the construction of the schools for the most part is of flammable material.

Let us first of all dwell upon fire prevention in the schools.

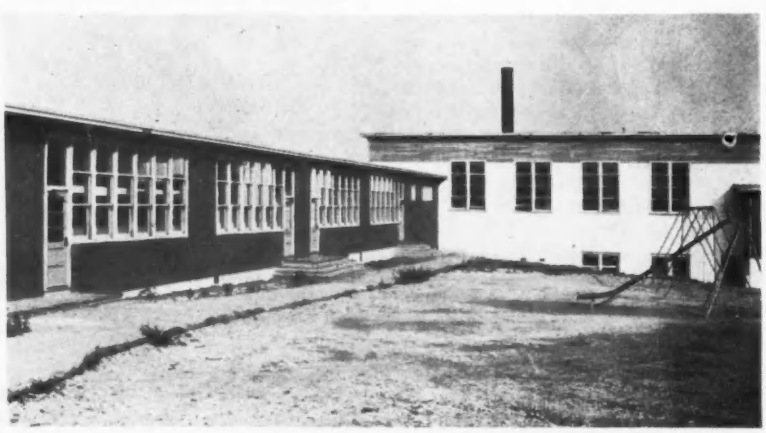
Building Design — Specifications and drawings of new buildings are checked by fire prevention engineers. Buildings have been designed as near as possible to conform with the Fire Codes and Building Exits Code of the National Fire Protection Association. Fire walls have been constructed between the wings and main school buildings with fire doors in the corridors. Another safety feature is that with the exception of the high school, all schools are only one story high.

Fire Inspections — Weekly fire inspections of all schools are made by competent fire inspectors from the Bureau of Fire Prevention. Fire hazards are noted and remedial action is taken to correct hazards.



Left. **Close-up of panic-proof hardware and wire glass on a typical exit door.**

Below. **Individual doors, opening outward, for each classroom are a unique feature of the Oak Ridge school fire safety program.**



Watchmen — Watchmen are stationed in each school from the hours of 7 p.m. until 5 a.m. They work on a compulsory tour system with a watch clock which has to be punched hourly at the various stations. Their primary duty is to check for fire. They are also assigned to check for vandalism, unauthorized entry, and the like.

Another phase of the fire safety program upon which particular emphasis is placed is fire protection. This is for a two-fold purpose. One, and of course the most important, is safety of life. The other is the fire safety of material and equipment. Many features of fire protection, plus the sound plan of fire prevention, have aided in keeping fire loss in the school system to a minimum. No fire damage has been in excess of $25. Given below are some of the features of the fire protection system.

Fire Alarm — Fire alarms in the school are separate and apart from any other alarm or signal device. Gong type alarms are standard in all the schools and are so located that they are audible at all times in any part of the building. A secondary system which has been devised by various principals is a continuous blast on the classroom signal. Fire alarms are plainly marked for ready visibility from both directions. The alarm system has been standardized throughout the school system to enable transferees from one school to another on the project to readily recognize fire alarms.

Fire Alarm Stations — Fire alarm stations are located throughout the buildings so that no one is more than 100 feet from the nearest fire alarm station. In addition to this, principally for fire drill purposes, each principal has a control button in his office.

Fire Extinguishments — There is one unit of extinguishment (a 2½-gallon soda-acid extinguisher) for every 2,500 square feet of floor space. This is over and above auxiliary fire hose from stand pipes which are provided. Laboratories, shops, photographic developing rooms, electrical equipment and related sciences are compensated by extra extinguishers for the special type of fire hazard. These extinguishments are inspected monthly

Above. **There is one of these 2½-gallon soda-acid extinguishers for every 2,500 square feet of floor space.**

by the fire inspectors and inspection tags are noted as to date of inspection. Semi-annual demonstrations in the use and operation of extinguishers are given to teachers, students, and watchmen.

Fire Department Response — Upon receipt of a fire call from a school, three fire companies are immediately dispatched. This is done irrespective of the size of the fire reported. The fire department has the very latest type fire fighting equipment and well trained personnel. Pre-fire fighting instruction is given firemen in all schools and actual "dry-runs" are made to acquaint firemen with potential sources of fires, building layout, location of hydrants and related data necessary to insure expeditious and efficient fire fighting in the event of an actual fire.

Above. **This manually operated siren is used as an emergency fire alarm in the event that the regular system failed.**

On the left is the fire gong. The regular classroom signal is pictured at the right.

See All — Know All

Fire Fighting in the Atomic Age

THE fire chief sat comfortably in his paneled office at the new fire department headquarters. It was a comfortable, modern office with beautiful walls of fire-retardant walnut, indirect lighting, air conditioning, and a luxurious rug in which you would sink up to your ankles unless wearing snowshoes. Outside distractions, noise, glare were shut out, but the chief was not out of touch with the community that he watched over from his inner sanctum. On one side of the spacious room was a panel of electronic equipment. There were several generously sized television screens answering to selector circuits at fire alarm headquarters and responsive to control buttons at the panel and at the chief's large mahogany desk. There was also a radar recorder which could likewise repeat images picked up by the equipment at fire alarm headquarters. On his desk, in addition to the regular business telephone, was a radio-telephone hand set by which he maintained contact with every subordinate chief officer.

The chief had just lighted his morning Corona and was about to review the monthly report of the assistant chief in charge of fire prevention — the largest division of the fire department — when the pleasant sound of chimes broke the morning quiet. 3–2–7–2, repeated three rounds of a fire alarm box number.

"Adams and Linden," mused the chief. "Not far from Engine 17. Charlie's acting chief with Car 10 today. The mayor wants a report on each man who is eligible for promotion to district chief according to the new civil service list. Guess I'd better ride with him on this run by television.

"George, throw in the television circuit for Box 3–2–7–2 and place the recorders from both Engine 17 and chief's Car 10 on adjacent screens."

A snappy young aide in a lieutenant's uniform and wearing the insignia of a fire department electrical engineer quickly threw the selector switches. On one screen the chief could view the road ahead of Engine 17 which was just then swinging into narrow Adams Street. On the other adjoining screen he could see the road ahead of the car of the chief of District 10. Ahead they could see the fire, an automobile burning vigorously.

A double-parked truck blocked the approach of Engine 17, which accordingly dropped one of its men with a traffic summons charging the operator with failure to give right of way to fire apparatus.

Sensing the delay due to the traffic situation, the acting chief of District 10 radioed the pumper to detour around the block and approach from the other side. He then radioed the other apparatus en route and still some distance away, to return to headquarters.

"That boy has a head on him," thought the chief. "He'll get a good recommendation."

Aloud, he told his aide to shut off the

Continued on page 15

Edge Hill Fire Company

Abington Township, Pennsylvania

By Chief John Manzinger

THE Edge Hill Fire Company of North Hills, Pennsylvania, has a membership of 150, with fifty active fire fighters. The company protects an area of about three square miles in the communities of North Hills and Ardsley (population about 3,500). The company is strictly volunteer, supervised by a board of six directors and officers constituting the Board of Governors. There are two pieces of apparatus, a 600 g.p.m. pumper and a combination booster truck, both built by the Hale Fire Pump Company of Conshohocken, Pennsylvania. Both pieces are in good condition, having been remodeled eight years ago.

Apparatus is housed in a modern three-door fire station, 65 x 40 feet in area, with concrete floor and a hose tower capable of accommodating 1,000 feet of hose. The building was erected in 1933 and is not as elaborate as were the original plans. This was due to the closing of the banks and the loss of our money, but we did manage to build an attractive one-story fire station. The chief sources of company income are taxes, dues from contributing members, suppers, and card parties.

Special activities include the sponsoring of bowling, baseball, darts and quoits, and a yearly banquet with noted guests.

Illustrated here are samples of our fire report and also a sample copy of our engineer's or driver's report and a report for members of the fire police. It will be noted that the fire report gives a full outline of the service that was performed, where the different size lines were placed, and the names of the men who attended the alarm. We have discontinued the practice of writing in the names, and have substituted a numbering system, each man has a number which he uses instead of his name. In conjunction with this, we have a call board hanging on the wall with each man's name and corresponding number. Alongside of each name and number is a small hole where each man places a peg or pin after returning from a fire so that the chief, in making up his fire report, can write down the numbers of all those in attendance. This is quicker than writing each individual name. All the pegs are then removed and placed in a little tray at the bottom of the board after the report is made out.

All fire reports are made in duplicate; the original is removed immediately after it is made up so that it cannot be altered in any way. At the end of each year a service report is made up from the data, such as hose of various sizes, feet of ladders raised, gallons of water pumped from booster tanks, etc. Each man then has his amount of fires attended totaled, thereby selecting the most active men to compose the Active Crew. (In our case twenty-five men in addition to the chief officers.)

When a man works his way up to become a member of the crew, he is issued a complete fire fighting uniform for his own personal use and is held responsible for keeping it clean. His uniform also has a number that corresponds to that on the call board. The number is placed on the helmet and also on the coat (about the middle of the back) and thus serves as an identification, both for his own benefit and for the chief working on the fire.

At one time we carried the fire clothes on the apparatus, but there was always too much confusion — men getting their boots, etc., mixed up. Now we have two large movable racks that hold the fire clothes and thus the suits are kept in better condition. We use the regular firemen's helmet and the Globe lined coat which have given us good service. We also have six extra outfits for those who are not on the crew and any member may wear them.

The engineer's or driver's report is very important. In the old days when a driver backed the apparatus in the station sometimes he checked the equip-

DRIVER'S REPORT

Alarm No. _____ Date _____

Location _____ Time _____

IN — OUT

Nature of Alarm _____

	SERVICE					
Those Responding	Fighting Fire	Traffic	On Fire Grd.	Front Bld.	Back Bld.	Inside

Use Other Side For Violations Or Remarks

EDGE HILL FIRE CO., ENGINEER'S REPORT

Alarm No. ..... Date .....

Out .....

In .....

Location .....

Description of Fire .....

Engineer must check each item when machine is returned to engine house.

OIL IN CRANK CASE
GASOLINE IN TANK
WATER IN RADIATOR
CONDITION OF BRAKES
CONDITION OF STEERING
AMMETER SHOWING CHARGE
SPEEDOMETER READING
MILES ON ROAD
OIL PRESSURE
TIME PUMPED
PUMP GUAGE & TACHOMETER
PUMP & COOLING SYSTEM DRAINED
ALL VALVES CLOSED
BOOSTER TANKS FILLED
RELIEF VALVE
TANK OUTLET VALVES CLOSED
PUMP GREASED
LIGHTS
TIRES
DID ENGINE START PROPERLY?
CHAINS

ENGINEER

ABINGTON TOWNSHIP FIRE DEPARTMENT
CHIEF'S REPORT

Alarm No. Dist. No. 4 Edge Hill, Pa.

Month	Day	Year	Out — M:	Alarm received from Headquarters
			In — M:	Local phone / Rec. By ..... Pedestrian

Location ..... Mileage to Fire.....
Fire out on arrival? Yes. No. Covered up for ..... In service Yes / No
Detained before getting to location Yes / No Give reason .....
Grass Field ..... Brush or Rubbish ..... Woods .....
DESCRIPTION OF BUILDING: Stories high ..... Construction .....
Construction of Roof ..... Construction of Floor .....
Occupied as: Dwelling, Business, Garage (Public) (Private), Etc. .....
Occupied by ..... Name of owner or agent .....
Nature of contents ..... Address owner or agent .....
Cause of fire ..... Where fire started .....
Fire spread to ..... Room ..... Floor ..... Building .....
How extinguished? Waterline ..... Chemical ..... Booster ..... Brooms ..... Etc. .....

Value of Building $..... Loss on Building $..... Insurance $.....
Value of Contents $..... Loss on Contents $..... Insurance $.....
Name of Insurance Cos. ..... Were Salvage covers used? Yes No

Apparatus used or responded; Booster? Type 4 ..... Driver .....
Pumper-Type 5 ..... Driver .....

Name of injured, if any, ... Address .....
Nature of injury ..... Fireman or Spectator

ATTENDED ALARM	AUTOMOBILES, TRUCKS, ETC.
Chief	Owner ..... License No. .....
1st Asst.	Driver ..... License No. .....
2nd Asst.	Make of Car ..... Type .....
Engineer	Cause of fire .....
1.	On Street ..... In Garage .....
2.	Extinguished by PYRENE, FOAM, Etc. .....
3.	Quantity used .....
4.	
5.	No. of Hose Lines used; 2½ ..... 1½ ..... ¾ .....
6.	No. of Lines Laid from Water Supply .....
7.	Ft. of Hose used by our Co. 2½ ..... 1½ ..... ¾ .....
8.	Ft. of Ladder raised .....
9.	Position taken with 2½" .....
10.	Position taken with 1½" .....
11.	Position taken with ¾" .....
12.	Loss of hose; Date ..... No. of Ft. .....
13.	Damage to equipment; list in detail:
14.	
15.	
16.	
17.	
18.	
19.	
20.	

(USE OTHER SIDE FOR DETAIL AND REMARKS)

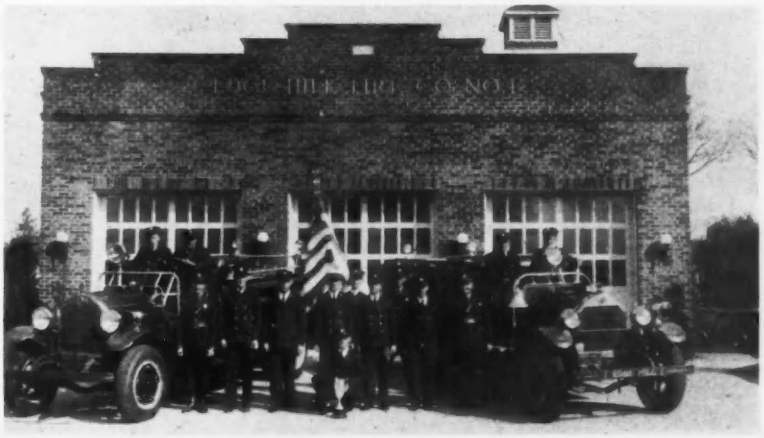
ment thoroughly and at other times he did not. With this report to fill out he is reminded of the different things he must check and any "faultys" are written down. This in turn is read by the chief engineer and corrected. Sometimes the chief engineer may make a complete recheck to see if the driver slipped up on anything.

We are very particular about engineers or drivers. To be a driver a man must be an active member for at least one year. The reason for this is that he must have had fire school training and actual fire fighting to gain experience. His name is then proposed to the Board of Governors, who may reject him — possibly because they have known him to be timid or perhaps a "cowboy driver" with his private car. If they accept him, the chief engineer proceeds to give him complete instructions. He may even be given a chance to drive to some small fire to see how he reacts in the handling of apparatus. Finally, the chief engineer gives his report and findings back to the Board of Governors for their final approval. In this way, our fire company has excellent drivers.

The fire police have done some good work, although they are sometimes criticized for holding back "curbstone firemen" with their cars who may have heard the siren or seen the blaze. It is a great relief to have two or three on the job in addition to the regular township police. These men are carefully selected and will give any motorist a "break" within reason if not given any back talk. They are also called on at times to do fire fighting and are trained in first aid work which often relieves a fireman to continue with his duty.

We keep a card index system for all hose that is bought. On this card is printed the size and brand of hose, date of purchase, price, and the name of the company from whom purchased. Each length of hose is tested when received and also given a number which is punched on the coupling and also printed on the index card. When the hose is placed on the apparatus or in the tower (whichever the case may be) the corresponding card follows through in the index file showing the location of each section of hose. For example — 2½-inch hose on pumper,

Continued on page 24



Trained Fire Departments are Essential to Industry

by R. S. Huffman, Safety Engineer and N.F.P.A. Member
Oklahoma Natural Gas Company, Tulsa, Oklahoma

MODERN industry could not function effectively without the safeguard of fire protection service engineered to meet the needs of each specific industrial property. The larger industries, and many of moderate size, maintain fire brigades to control any outbreaks of fire that may occur as a part of plant operations.

However, very few manufacturing occupancies are so situated as to be entirely self reliant as far as fire protection is concerned. Thus Mr. Huffman stresses the importance of the proper relationship between the local industries and the public fire department. It is necessary that industrial fire brigades and local fire department officials maintain a spirit of cooperation that will help insure control of any fire.

There have been many complaints by public fire departments that industrial fire brigades are prone to wait until a fire is beyond control before asking help from the municipal fire department. On the other hand, many industrial fire brigade officials felt that the local firemen lacked sufficient knowledge of the particular hazards and specialized equipment to make effective fire fighting operations possible.

The war years have served to bring the public and industrial fire fighters closer together. Municipal fire department officers and members have helped train new industrial fire brigades. Many industrial fire departments participate in mutual aid plans for backing up the local fire forces in unusual emergencies. Whether the fire fighting is done by public firemen, by industrial firemen, or by both, it is essential that each organization be trained to meet the specialized problems encountered in industrial fire fighting. One of the most essential elements in such training is an appreciation and understanding of the special fire protection equipment such as automatic sprinklers and private water supplies maintained by various industries. — EDITOR.

FIRE prevention was practically nonexistent a century ago. Fire protection consisted of a few volunteer units operating on a trial and error basis, hoping to stop the fire before an entire city became a total loss. Up until fifty years ago in the great Southwest, with a few exceptions, the same conditions, lack of both fire protection and fire prevention, were true. Only in the last quarter of a century has fire protection been given the green light.

The strides that have been made have been due to the fact that "necessity is the mother of invention." Fire departments have progressed from old hit-or-miss tactics to an exact science of operation. In doing so, they have acquired a number of additional responsibilities, supplementary to the principal purpose of fire fighting. The over-all value of this science has already been indicated by an increasing degree of appreciation and by paying its way in insurance savings and prevention of large losses to industry and the public.

In order to consider the value of a trained fire department to industry, it is necessary to journey back to the old volunteer days. Max Berger partially covered the subject in his article "Fire Fighting in New York City a Century Ago." (VF, April 1945.)

Two or three serious fires a night were quite ordinary occurrences. There was little loss of life but property losses were very high. The Great Fire of 1835 destroyed fifty acres in the heart of the city. Rates and premiums of New York insurance companies were very high, but so many claims were constantly being filed against the insurance companies that many failed. One can imagine the effect that this had on various businesses and industries.

In this era, some industries were regarded as human slaughter houses. Safeguards around machinery were regarded as "sissy stuff." Industrial injuries and loss of life were common occurrences. In the chemical, petroleum, and other industries manufacturing high volatile products, losses through fire and explosions were disastrous.

From 1920 on, industry began to regard the mechanical safeguarding of property and employees as a necessity. A large number of the fire departments had, by this time, trained personnel, and the next step was along the lines of industrial fire protection and prevention. The various technical authorities and fire associations were responsible for the beginning of this activity.

The trained personnel of the fire departments assisted materially in setting up the industrial fire prevention activities. In or near cities, the industrial fire protection programs were on the basis of an emergency supplemental activity. They were not, and were never intended to be independent and wholly contained fire fighting units. Exceptions are, of course, necessary to those concerns that are outside city facilities. It can reasonably be expected that those self-contained fire fighting units are controlled by well trained fire department personnel.

Now, for the moment, consider the additional responsibilities acquired through necessity by our trained fire fighting departments. It was mentioned that formerly these departments were expected only to stop fires and save ad-

Fire department, General Machinery Ordnance Corporation, U. S. Naval Ordnance South Charleston, W. Va. Chief J. C. Burdette

joining property. The problem of persons being trapped in burning structures was ever present. Rescue practices became a standard technique. This required intensive training of fire department personnel. Quite often property damage from water would be much greater than damage from the fire. Protective measures and salvage technique have been so developed that water damage is now at a minimum. Danger of falling walls often resulted in the loss of lives. Demolition practices have been developed and adopted by the departments. Quite often in the past, individuals in burning structures have been injured or overcome and after rescue have died from lack of prompt and efficient emergency attention. First aid training is a necessary item for an up-to-date fire department.

All of the phases mentioned have a much greater value to industry, both tangible and intangible, than can be estimated from the standpoint of appreciation or economics. Through the technical knowledge of our fire prevention and protection authorities, industry has benefited immensely. Good housekeeping practices are now a customary and necessary part of safety programs. Instruction is received in the use of emergency fire protection equipment. Employees are equipped and prepared to control a spreading fire until the fire department arrives to take over. They know the proper location of fire doors, escapes and exits, and many other precautionary measures.

Certain responsibilities have been established that reflect more than dollars and cents savings to the company:

(1) Inspection of industrial plants and property for fire prevention and protection.

(2) Surveys of industrial areas.

(3) Establishment of fire fighting facilities convenient to industrial areas.

(4) Prompt and efficient coverage in event of fire.

(5) Prevention of large property loss.

(6) Prevention of manufacturing and wage losses.

(7) Establishment of codes, standards and ordinances for preservation of lives and property.

Perhaps there are other important functions not mentioned, but these seven responsibilities are realized as among the most important. The natural gas utility business is an example. The constant hazards are fires, explosions, and asphyxiations. It is assumed that the trained fire departments are as closely allied, or perhaps closer to the knowledge of these hazards than in any other industry. It can be readily realized that this association is of utmost value.

So important is fire prevention and protection to industry that military

Continued on page 24

Hoffmann-LaRoche, Inc., Fire Brigade, Nutley, N. J. This utility truck with 1000 feet of 2½-inch d.j. hose, eight 20-pound carbon dioxide extinguishers, 600 pounds of foam powder, and other miscellaneous equipment, protects a plant of forty-three buildings. It was designed by the company and installed on a used chassis.

Plant Fire Protection Engineer Norman Ball reported that the 104-acre plant is divided into three zones with a fire company in each. The brigade is composed of fifty members, each chosen for his working location in the various buildings to ensure maximum coverage. All members are strictly volunteer.

Tennessee Valley Authority, Public Safety Fire Service, Wilson Dam, Ala. Organized in 1917 under the ordnance department, this fire fighting group came under the TVA in 1934. The seventy firemen, in shifts, protect a reservation of 3,470 acres, a chemical plant, a hydro-electric plant, and numerous warehouses and dwellings. Their equipment consists of a new Buffalo quadruple combination, a General Detroit and two LaFrance triple-combination pumpers, and one Chevrolet grass fire truck.

Lone Star Fire Department, Texarkana, Ark. This department is located on the grounds of the Lone Star Ordnance plant, which is chiefly engaged in shell loading. The two fire stations house two 750 g.p.m. American-LaFrance triple-combination pumpers, two 500 g.p.m. Ward LaFrance triple-combination pumpers, two pick-ups with 150-gallon booster tanks, a 1000-gallon tank truck, two touring cars, and an emergency truck. This brigade attends all the training courses offered by Oklahoma A. & M.

Northeastern Steel and Wire Co., Sterling, Ill. This brigade, besides protecting the company's premises, operates in the capacity of a rescue squad with gas masks and stretch ers available. A first aid room provides twenty-four-hour service. The firemen attend the Illinois Firemen's School and the Southern Wisconsin and Northern Illinois Firemen's School.

Bethlehem-Hingham Shipyard, Inc., Hingham, Mass. The industrial fire protection at the shipyard consists of sixty-five regular firemen and fifty volunteers. To safeguard the shipyard and its 14,000 workers, the firemen maintain two 750 g.p.m., centrifugal, three-way Mack motor pumps; a maintenance truck; two ambulances; and three auxiliary pumpers.

Associated Refineries, Inc., Duncan, Okla. There are ninety-seven acres of company property to be protected by this brigade. At the present, there are ninety men trained in all the types of equipment in the fire station and four fire houses. The company operates two 750 g.p.m. pumps and plans to add two 1000 g.p.m. pumps.

Noranda Mines Fire Department, Noranda Mines, Ltd., Quebec, Canada. The department, which has been operating since 1927, is composed of mine employees appointed by the company. Although the chief receives a monthly salary, the firemen are paid on a point system. Points are figured according to the number of practices and fires attended. The firemen's extra-curricular activities consist of yearly tournaments.

Connecticut Firemen to Learn by Doing

Plans for New Firemen's Training Center Include Typical Block of Buildings in Which Firemen Can Fight Varied Types of Fires with Own Equipment

PLANS for a proposed firemen's training center for Connecticut to surpass anything in the country have been announced by Coston C. Crouse, Director, Public Service Training, Connecticut State Department of Education, to the Connecticut Drillmasters' Association and the Connecticut Fire Chiefs' Association. At the request of Mr. Crouse, tentative plans for the training center were prepared by N.F.P.A. Engineer Warren Y. Kimball, Editor of VOLUNTEER FIREMEN. Copies of these plans are to be distributed to the various fire chiefs and drillmasters of the state to obtain further suggestions on various types of fire problems that can be reproduced in the training center. A detailed memorandum outlining the various facilities proposed and suggesting types of training that may be carried out at the request of fire chiefs and instructors is included with the plans.

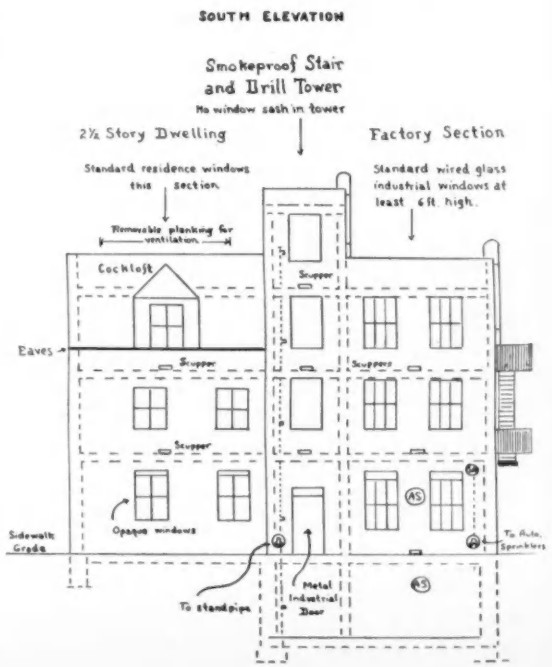
The proposed center would be a departure from the usual training tower and drill yard. These would be replaced by a replica of a street corner in a typical Connecticut town. There would be a store, a dwelling, and a factory building of permanent construction but designed to permit reproduction of all types of fires met in actual service. Connecticut firemen could make use of their own apparatus, responding from a modern fire station at the training center to fight fires under realistic conditions. Other facilities to be provided are: an outside yard for test fires with oil, magnesium, etc.; a paved drill yard for practicing with dry hose, ladders and other tools before beginners start actual building fire fighting operations; a tool storage house with a complete set of pumper, ladder and rescue company tools; and a suction basin simulating a small stream running under a rural bridge from which to practice various means of drafting.

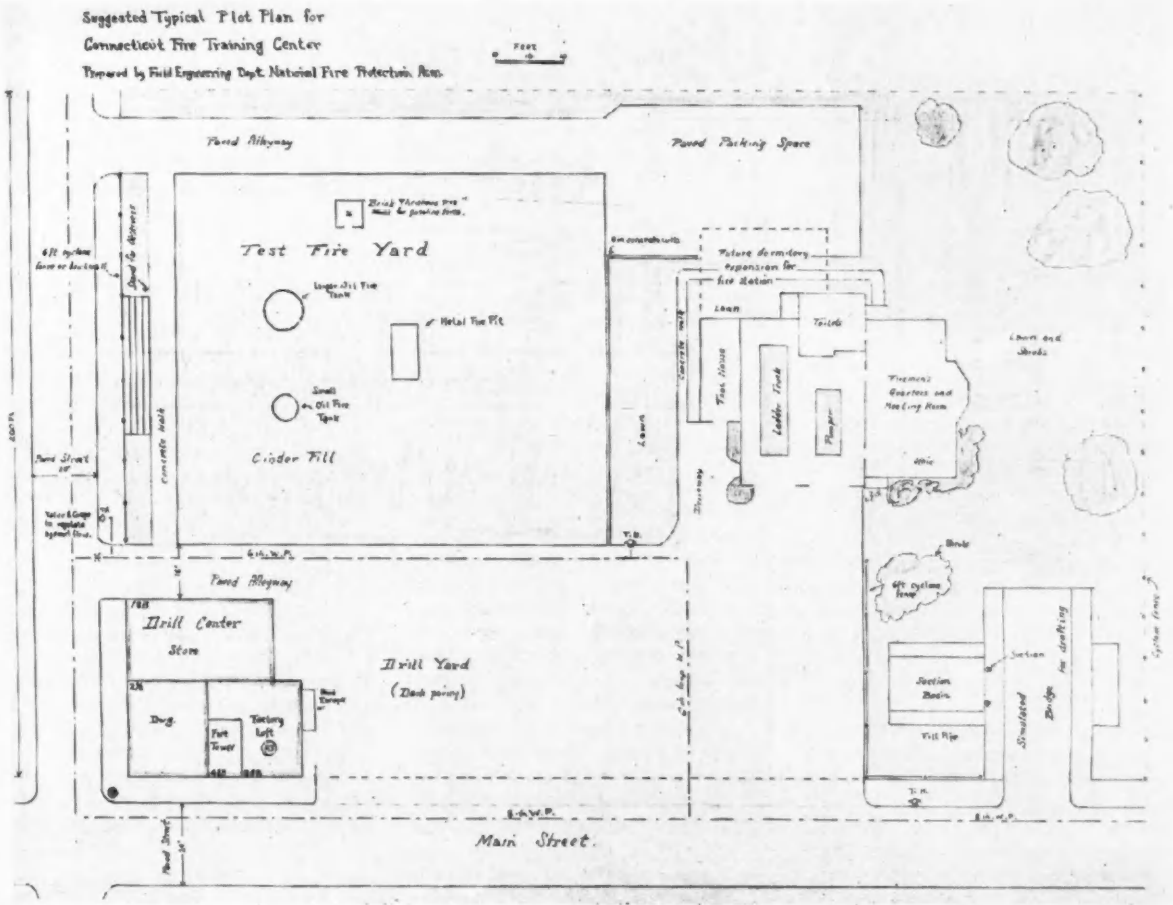
Firemen attending the training center will become temporary members of the volunteer fire company at the center and will participate in the entire routine of fire company operations. Classes in inspection work will make thorough inspections of the various buildings looking for fire hazards which may be planted on the premises by the instructors. Firemen attending classes may be surprised by fires started during the night under situations similar to those volunteer firemen encounter in their own communities. The correct method of attacking cellar fires in the stores and buildings will be taught firemen; various means of ventilation will be practiced; salvage operations can be carried out by classes studying that subject at the same time classes in fire stream practices are actually attacking the fire. Where firemen attending the classes come from small communities lacking hydrant service, they will supply all streams from the pumper suction basin with possible relay of water through pumps or tank truck units near the fire.

At the front of the store building there will be typical show windows with ventilation transoms above and with openings under the show windows through to the basement permitting attack on cellar fires, as well as the use of siphons. The advantages of inspecting local store properties prior to a fire will be readily demonstrated as firemen will learn various means of forcing entrance in the store block and reaching any fire in the basement or in the cockloft. Proper means of ventilating roofs of the various types of buildings will be taught.

The dwelling unit will be a typical two and a half story frame building with sloping roof giving opportunity for roof

WEST ELEVATION
Store and Dwelling
Top of Smokeproof Stair and Drill Tower
Position of Fire Door at rear of Dwg.
Pitch of Roof not to exceed 40°
Flue openings into attic
into floor joists
into cockloft
Scuppers
Transoms for ventilation
General Store
Scuppers
Sidewalk Grade
Basement
Flue openings direct to Cocklofts
Pit for making Smoky fires
Grill openings under show windows direct to basement for cellar pipes and syphons





ladder practice. The interior of the dwelling will be arranged to permit typical dwelling fire problems, including rescue operations.

In the center of the block an approved factory smoke-proof tower four stories high will take the place of the usual drill tower and provide facilities for drilling with the longest manually raised ladders, use of standpipes, rope work, etc. Portions of this factory building will be equipped with automatic sprinkler systems commonly found in many Connecticut industries, so that firemen may study the proper coordination of sprinkler protection with the use of hose streams. The buildings will be equipped with approved exits, a fire escape, approved fire doors of various types, and numerous other fire protection facilities.

The group of buildings will be arranged with open partitions and flues from the basement to upper floors and from building to building to facilitate the spread of fire as frequently experienced in old Connecticut buildings lacking fire stops.

In the model fire station there would be a meeting room where chiefs' and drillmasters' associations can hold their meetings. Ample kitchen facilities would be provided so that meals can be served. There would be an office for the chief instructor and a library of authoritative fire service publications.

Instruction in the use of various modern appliances for handling flammable liquid fires and fires in light metals such as magnesium, will be demonstrated outside of the buildings in a test yard equipped with various size oil tanks and similar facilities. The open test yard will also be used for the handling of automobile, gasoline tank truck, and aircraft fires. Firemen would learn the correct way to use water spray nozzles, spray apparatus, various types of foam equipment and other extinguishing agents for Class B fires. The training facilities will also include rescue and emergency appliances, floodlight units, electric saws, etc. A suitable grandstand would be provided at the test yard from which fire chiefs, drillmasters, and other interested spectators could watch various fire tests as well as demonstrations of new equipment.

Definite location of the center has not been determined by the Connecticut Department of Education, but the plans are being energetically developed with the cooperation of all state fire service groups with the hope that the state of Connecticut can be the first to develop these improved training facilities.

Dallas Fire Prevention Week Stunt

From the N. Y. *Journal of Commerce*

EACH day during Fire Prevention Week one man in Dallas, Texas, was a "fire demon," his only distinguishing mark his red tie. The first person to approach this man and ask him if he was a fire demon received $5, provided the questioner knew the motto of Dallas' Fire Prevention Week, "Prevent fires and beat Houston" (Texas).

To complicate matters, every member of the Dallas Junior Chamber of Commerce and many local insurance agents also wore red ties. The Dallas Insurance Agents' Association paid the daily award.

Fire School

Florida. The Annual Fire College is scheduled for November 5–10, at the Florida State Fire College in Miami. This year's session of the college will undoubtedly be a banner affair as it is expected that there will be several prominent figures in fire circles present.

Requests have already been received for space to demonstrate several new pieces of fire equipment.

MAKING A GOOD JOB OF IT

BY WARREN Y. KIMBALL

Using Larger Tips with 1½-Inch Hose

With short leader lines and somewhat higher pressures ¾-inch tips can be used

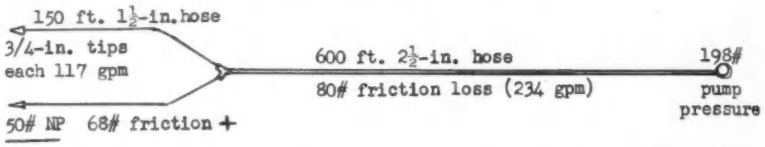
MOST fire departments use ½-inch nozzles on their 1½-inch leader lines. As is well known, these nozzles at about 50 pounds pressure throw slightly over 50 g.p.m. At this flow, the friction loss in the 1½-inch hose is kept down to only 10 pounds per 100 feet of cotton rubber lined hose.

However, a number of fire departments, using 1½-inch lines because of the advantage of mobility and ease of handling, still want to have a more powerful stream than that provided by a ½-inch tip. Some of these departments use a ⅝-inch tip on their 1½-inch lines. With the same 50 pounds nozzle pressure this larger tip throws out 80 g.p.m., but at this flow the friction loss in the 1½-inch hose rises to 22 pounds per 100 feet. This is seldom an important factor in short leader lines, as the required pressures can be supplied by any pump.

However, a few fire departments want still larger streams from 1½-inch hose and accordingly increase the nozzle size to ¾-inch tips, or one-half the diameter of the hose. At 50 pounds nozzle pressure this throws a whale of a stream for small hose — some 117 g.p.m. However, the friction loss is brought up to close to the maximum that is practical to supply under ordinary fire service conditions. This loss is 45 pounds for each 100 feet of leader line. This with the 50 pounds at the nozzle means that a 100-foot leader line assembly needs nearly 100 pounds pressure in addition to any loss in the 2½-inch supply line. With only a single 1½-inch leader line attached to the end of a 2½-inch line, the friction loss in the 2½-inch line with 117 gallons flowing will be only 4 pounds per 100 feet. But when you have two 1½-inch leader lines with ¾-inch tips discharging at 117 pounds each there is a total flow of 234 gallons through the 2½-inch supply line and you must reckon with a resulting friction loss of over 13 pounds per 100 feet.

Recently a fire department member asked the following question: "What engine pressure is required to produce 50 pounds at the nozzle of a layout of 600 feet of 2½-inch hose wyed off into two lines of 1½-inch hose, each 150 feet long with ¾-inch nozzle tips?"

TWO ¾-INCH TIPS — 50 POUNDS AT NOZZLE



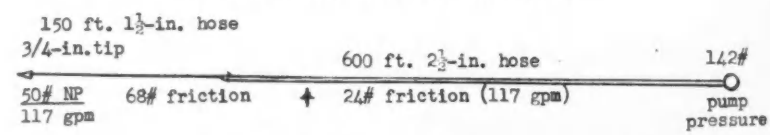
Let's see what this looks like on a diagram which shows the various factors that we must take into account.

First we need 50 pounds at the nozzle. Then we have the friction loss in the 1½-inch hose at the rate of 45 pounds per 100 feet of 68 pounds for 150 feet with 117 gallons flowing. Then we have an 80-pound friction loss in the 600 feet of 2½-inch hose, giving us a required pump pressure of just under 200 pounds.

Probably most volunteer fire departments are satisfied with the excellent work that can be done on dwelling fires by using the regular ½-inch tips on their 1½-inch hose. However, Chicago and a few other large cities do use ¾-inch tips on leader lines and it can be done successfully if the fire department is willing to operate at pump pressures as high as 200 pounds p.s.i. merely to supply leader lines.

One thing the above facts should show is that there is little sense in wrestling with a big 2½-inch line near the pipe when only a ¾-inch tip is wanted. Run the 2½-inch line up to the building and use the ¾-inch tip on an easy-to-handle 1½-inch leader line.

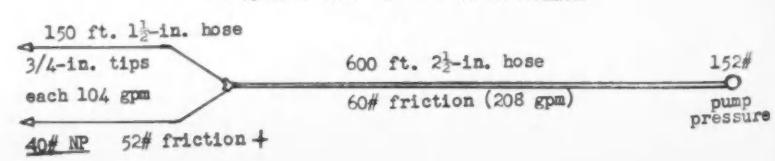
ONE ¾-INCH TIP — 50 POUNDS AT NOZZLE



With a single 1½-inch leader line with ¾-inch tip on 600 feet of 2½-inch hose, our pump pressure would be but 142 pounds, due to the lower friction loss in the 2½-inch supply line serving but one ¾-inch tip.

At this point we can make an interesting observation. If we are willing to drop the nozzle pressure on our two ¾-inch tips down to 40 pounds, we can supply the two 1½-inch leader lines in the above layout with 50 pounds less pressure at the engine. At the 40-pound nozzle pressure the output in each stream drops to 104 g.p.m. and the combined flow is thus down to 208 g.p.m. This reduces the friction loss in the 150-foot leader lines from 68 to 52 pounds and the friction loss in the 2½-inch supply line from 80 to 60 pounds, bringing the required pump pressure almost down to 150 pounds.

TWO ¾-INCH TIPS — 40 POUNDS AT NOZZLE



Fire Fighting in the Atomic Age

Continued from page 7

television recorders just as the all-out signal, ordered by radio, was sounded by the chimes. "Now let's review the recordings of last night's fire out to the old hotel. Assistant Chief Long who covered this desk last night says there were some lessons there I might want brought out at the next fire college. You can always learn from every fire and there was some question as to whether a deluge set could have been used advantageously."

"That new radar recorder does a fine job where there's not enough light for regular television. It not only records the state of the fire, but it's automatically synchronized with the time recorders at headquarters so that the number of minutes after the transmission of the initial alarm is automatically recorded at the top of the screen as the recording progresses and thus becomes a part of the record of the fire. In that way we know just what happened each minute after the first call was recorded. All subsequent fire alarm signals are also recorded so that we can see the exact condition of a fire when the second and third alarms are ordered. This lets us judge whether the additional help was really needed or whether more help could have been used."

Again to the lieutenant.

"George, I'm glad we're equipped with both radar and television recorders. The fire report states that the floodlight unit on Truck 30 was not working well and the television pictures are weak. However, we might as well have a look at them."

George sets the film recording of the previous night's televized fire record.

"Yes, the pictures aren't as good a they should be but they do give more detail of the fire fighting operations on a playback of the recording than we get from the radar recorder alone.

"Say, what's this? A hoseman from Engine 54 is straddling a hose line contrary to instruction. He must want to get hurt if that line should get away. Make a note for the drillmaster to see his lieutenant and find out whether the man should be sent to drill school for a thirty-day refresher course in basic drill for his own personal safety. One thing we insist upon in this department is that injuries due to carelessness be avoided. We want to keep our men in good condition and available for duty.

"Also make a note for the fire department chemist to give me a report on the concentration of water softener used in the hose streams at that hotel fire. I think that a higher concentration of surface tension-reducer would have speeded penetration of the streams and extinguished the fire sooner."

* * * *

"John — wake up! You've fallen asleep again over your Crosby-Fiske-Forster *Handbook of Fire Protection*. Get to bed now so you'll be rested for your fire captain's exam tomorrow morning," ordered Mrs. Smoky to her hoseman husband, perplexed by the marvels of an atomic age.

W. Y. K.

Associated Press Wirephoto

Niagara Falls, N. Y. The historic Cataract House, host to presidents and royalty during its 120 years of operation, was nearly destroyed by a fire of undetermined origin on October 14. News sources estimated the loss at $700,000.

Save Valuable Plants & Materials

Fyr-Fyter equipment has proven its value in preventing small fires from becoming disastrous through the loss of life and property. Recent catastrophic fires with terrific loss of life emphasize the urgent need of fire protection. A complete line of Underwriters' Laboratories Labeled Fire Extinguishers.

HELP SAVE LIVES AND PROPERTY
Get Fyr-Fyters for safety's sake. We advise and serve manufacturing plants, public institutions, etc., immediately. Write us today regarding Fyr-Fyter equipment for your own protection.

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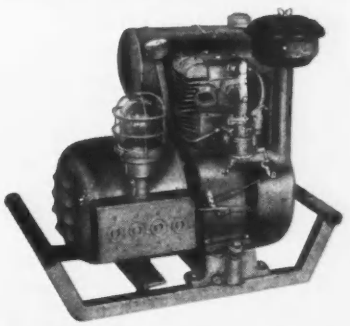

"U.S." ELECTRIC PLANTS

These rugged 1,500 watt units were designed to fire department specifications — built to meet every need. Dependable, quick-starting, 4-cycle engine. Positive lubrication. Automatic voltage regulation. No fussing to mix gasoline and oil. Compact — an easy load for two men.

Larger and smaller sizes are also available. Write for information.

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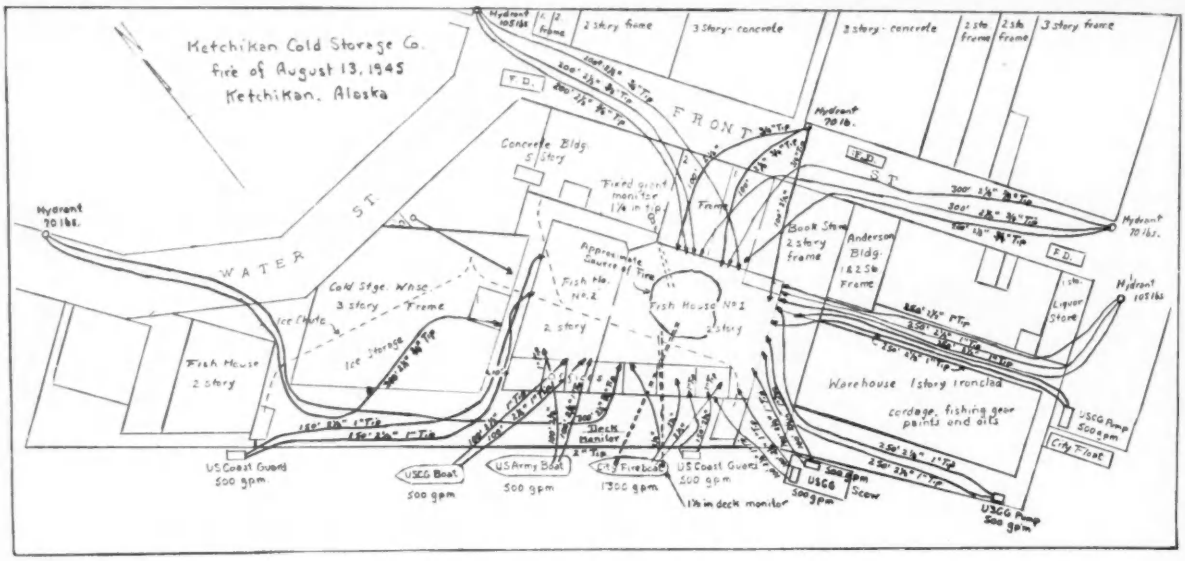


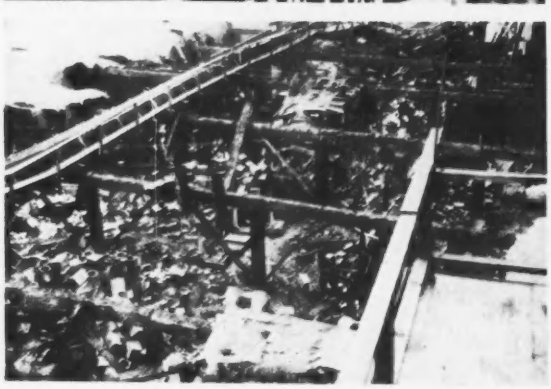
Fire Stands No Show in Ketchikan

WHEN fire rears its ugly head in the closely packed waterfront district of Ketchikan, Alaska, it gets royally smacked down by an overwhelming barrage of fire streams. Two large wooden fish packing houses caught fire on August 13, and here's what was handed to the fire.

Nine pumps, including those from three fireboats, put twenty-one streams on the fire, plus 2-inch and 1½-inch monitor tips from the city fireboat. Nineteen hand lines from the pumps had 1-inch tips.

In addition, five hydrants having pressures from 70 to 105 pounds supplied fourteen additional lines with ¾-inch or 1-inch tips. A fixed roof monitor on an adjacent building threw a 1¼-inch stream into the heart of the fire. Not one of the thirty-six streams was supplied by a hose line more than 300 feet long. Water was thrown on the fire at a rate exceeding 7,000 g.p.m.

When it was over, more than half of the frame structures actually involved had been saved. Loss to buildings was about $40,000.



"Give Us This Day Our Daily Bread.."

To most of us, if we were to stop to analyze our thoughts in the matter, those words are not an appeal for bread but for steaks, ham and eggs, pie, ice cream and the other articles of normal American diet. We have never felt the necessity of praying for bread, as such. Because we have always had plenty of it we have always taken it for granted. Yet we do ask the Almighty to give us bread. And He always has.

How many of us realize that millions of people are now addressing that same prayer to us — to the American people? And they aren't merely repeating words taught them by their Sunday School teachers when they were kids. Nor do they use the term as meaning a well-balanced and adequate diet. They mean *bread* — and they would be willing to accept a mighty poor quality.

Time was when we thought we were being considered in the role of an international Santa Claus. Perhaps we were. But who ever heard of anyone asking Santa Claus for bread? No, whether we like it, deserve it, or can even qualify, we are in the position of being prayed *to* for something that we have always prayed *for*, even though we had plenty of it.

Did you ever stop to think that the wheat in our elevators is something more than mere grain, a commodity to be bought and sold? Did you ever consider that there are millions of people who would literally sell their souls for the stuff up there in those bins? And do you realize that what is done with that wheat may have a tremendous bearing on whether this war-weary world really stays at peace?

It's something of a responsibility to have an elevator full of that sort of stuff — potential food for which millions of human beings are praying. It is difficult to realize, in our land of relative plenty, the value of wheat and our other foodstuffs in terms of human lives. Yet there is such a value, even far beyong the present worth of the half-starved peoples of Europe and Asia. Food in abundance may well insure peace in a well-ordered world for generations to come; lack of it can well mean chaos.

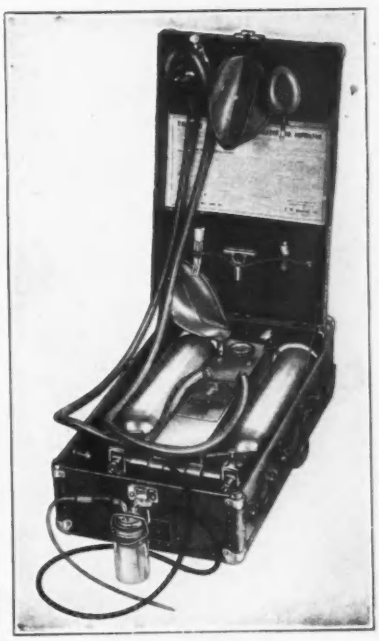
It is not for us as individuals to say how this shall be accomplished. It is for us, rather, to see that not one bushel of wheat, or of corn, or beans, or any other of the life-sustaining products entrusted to our keeping shall be wasted. It is a stewardship that is not to be taken lightly, nor carelessly administered.

— — — This message from the Grain Dealers National Mutual Fire Insurance Company is very appropriate for the Thanksgiving month. Present it to your local editor that all persons in the community may read it. The transformation of war-stricken countries to peacetime serenity is directly related to the amount of food we in America can share. May all those who are in any way custodians of properties producing or housing potential food supplies read this and consider.—EDITOR

Acme

The menace of falling walls, coupled with the danger of live wires lashing down at the fire fighters, is dramatized in this picture. Even when walls are of frame construction there is the chance that careless firemen may be showered by falling debris. The cautious fireman tries to avoid, as far as possible, the dangerous neighborhood of fire-weakened chimneys and walls.
The fire at the right occurred in a waste paper salvage company warehouse in Philadelphia. Five alarms were sounded and an entire city block threatened with destruction before the flames were under control.

IN PEACE AS IN WAR— AMERICA'S FOREMOST RESUSCITATOR



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Has taken first place in resuscitation equipment in our country by superior performance in critical cases of asphyxia. This is the verdict of leading fire departments everywhere.

That is why you should investigate by writing for more information or for a demonstration at your convenience.

J. H. EMERSON CO.
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Announcing

THE POST WAR MODELS OF NEW FIRE APPARATUS by AMERICAN-LAFRANCE

Since Pearl Harbor, men in the fire service have anticipated with increasing interest new post war models of fire apparatus. They have generously cooperated in design surveys to provide suggestions and ideas for greater utility, ease of handling and higher operating efficiency.

American-LaFrance engineers have incorporated these excellent features, with war proved technical processes and construction, to provide you with this basically improved new line of post war fire engines.

YOUR POST WAR AERIAL

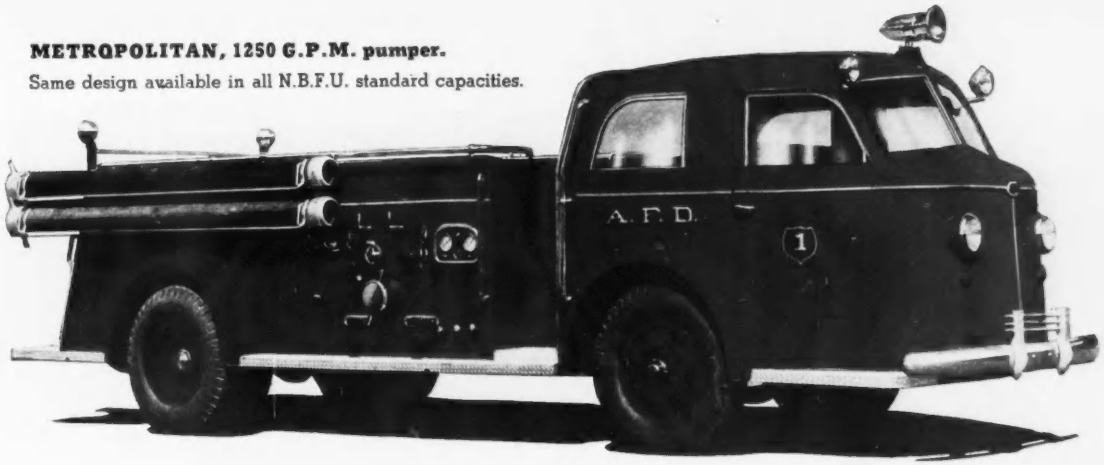
Has more visibility—It is narrower in appearance and dimension—shorter turning radius—seating capacity for 5 men—balanced load distribution—more accessibility—more compartments for equipment mounting.

Pilot models have been completed and are available for inspection and demonstration at the factory. Production will start in the early Spring of 1946 for mid-summer delivery.

All-around visibility and narrowed front end provides better and safer driving.

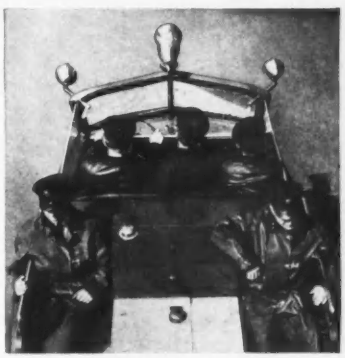
MODEL 4-100—Also available with 65', 75', or 85' steel aerial ladder.

METROPOLITAN, 1250 G.P.M. pumper.
Same design available in all N.B.F.U. standard capacities.



YOUR POST WAR PUMPER

Another example of American LaFrance leadership in serving the fire departments. More visibility—5 man seating with easy exit at the side—big equipment compartments—shorter wheel base—better acceleration and hill climbing ability—more accessible—more equipment mounting space—2½ inch suction inlets (in addition to standard suction inlets)—provision for front or rear suction.



Full 5 man seating for all open and cab models. Ease of entrance and exit is a feature.

Leadership AS ALWAYS WITH

more VISIBILITY for the driver—no long hood — weather protection with high windshield, doors and half glass. Siren and flasher light mounted high for long range warning.

more MANEUVERABILITY with short wheel base (150 inches on 750 gallon pumper, 160 inches on 1250 gallon pumper). Narrow streets and traffic are no problem with these new models.

more UTILITY is provided by more equipment compartments (weatherproof) and a big equipment box in front of body—more running board space for equipment—larger water tank—larger hose body.

more EASILY SERVICED with new engine location—pump easily serviced without disturbing hose or water tank—in brief, every unit subject to inspection or servicing has been made easily accessible for your convenience.

Write for folder illustrating the many advanced features of this new line of American LaFrance post war models. All standard types and capacities will be available in this new modern design.

AMERICAN-LA FRANCE-FOAMITE CORPORATION
ELMIRA, NEW YORK, U. S. A.
LA FRANCE FIRE ENGINE and FOAMITE LIMITED
TORONTO, 9, ONTARIO, CANADA

INSEPARABLY LINKED *with* PROPER MAINTENANCE

PROTECTION ENGINEERS know from experience that the reliability of any protection system depends upon its supervision and maintenance. If either of these requirements is neglected *there can be no assurance that the system will be in condition to operate when an emergency arises.*

A.D.T. Protection Services are inseparably linked with proper maintenance. Behind every A.D.T. installation there is an organization of protection specialists which provides continuous supervision, periodic inspections and systematic tests and unceasingly maintains the protective signaling system in proper operating condition.

In more than 350 cities and towns in the United States where A.D.T. Central Station Protection is available, fire alarm, burglar alarm, watchman supervisory and sprinkler supervisory systems and other A.D.T.-maintained protective installations are connected to A.D.T. Central Stations for continuous supervision and the transmission of alarms to police and fire departments.

Outside of Central Station areas the same systems are installed to give visual or audible alarms on the premises and, if desired, are provided with direct-wire connections to fire fighting and police organizations. In these cases, too, A.D.T. inspects and maintains the protection equipment according to highest standards, thereby establishing maximum dependability.

Write to the nearest A.D.T. office or the A.D.T. Executive Offices, 155 Sixth Avenue, New York 13, N. Y., concerning your particular problem. We shall be glad to make recommendations and furnish complete information.

A. D. T. ELECTRIC PROTECTION SERVICES

Controlled Companies of **AMERICAN DISTRICT TELEGRAPH CO.** *155 Sixth Ave., New York 13, N. Y.*

CENTRAL STATIONS IN ALL PRINCIPAL CITIES OF THE UNITED STATES

A·D·T

Electric Protection Services

AGAINST FIRE · BURGLARY · HOLDUP

A NATION-WIDE ORGANIZATION

Connecticut Drillmasters Have Field Tryouts

A DAY of field tryouts of various fire fighting evolutions marked a joint meeting of the Connecticut Fire Chiefs' Club and the Connecticut Drillmasters Association at Simsbury State Forest on September 29. There was not a dull moment from the beginning of the day until the last section of hose was rolled up late in the afternoon. A carefully prepared program of evolutions gave ample opportunity for answering many questions as to the effect of varying nozzle sizes, pump pressures, relay operations, and actual fire fighting techniques.

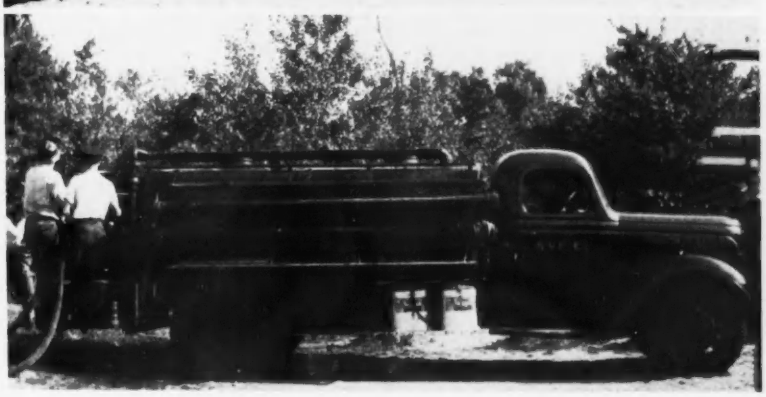
At a luncheon business meeting newly elected officers of the Connecticut Drillmasters' Association were Battalion Chief Thomas Collins of New Haven, President; Lieutenant William Bently of Stratford, Vice President; and Deputy Chief John O'Loughlin of West Hartford, Secretary-Treasurer.

Event No. 1 was a demonstration of a 1,200-gallon tank truck unit built by the volunteer firemen of Simsbury, Conn., under Chief Lea A. Hutchinson. At the signal, the tank truck, which is equipped with a 500 g.p.m. OCD pump, rolled into action supplying a good 1-inch stream from a 2½-inch line, while Simsbury's LaFrance-International 500 g.p.m. pumper was laying a reverse line 900 feet to a pond to take suction and back up the 1,200-gallon tank. Operating at 170 pounds, this pumper was able to keep the tank full.

A water thief was then inserted in the 2½-inch line and two 1½-inch lines with ½-inch tips were then supplied from the tank, in addition to the 1-inch tip on the big line. Pressure on the small tips was 28 pounds and on the large tip 36 pounds. The total flow was 255 g.p.m. which was within the capacity of the supply line to the tank truck.

Event No. 2 retained the tank truck and pumper in the same positions but

Continued on page 23

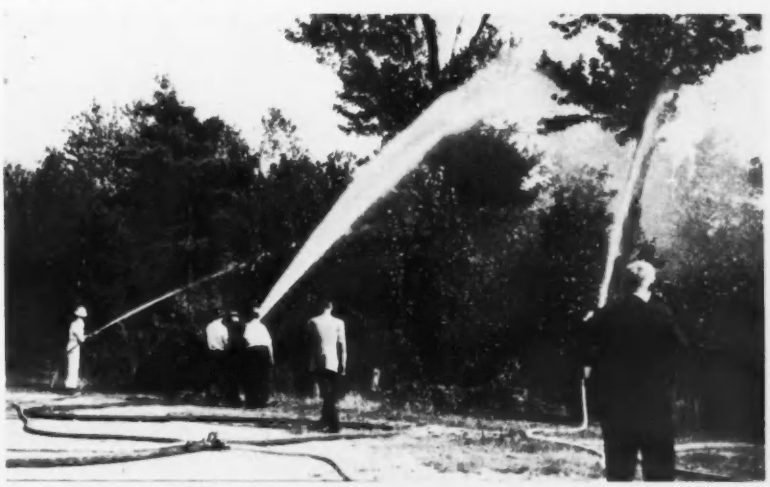


Tank truck supplies two 2½-inch lines with 1-inch tips (total, 430 g.p.m.).

Below. **Tank truck in relay supplies 2½-inch line with 1-inch tip, two 1½-inch lines with ½-inch tips (total, 255 g.p.m.).**

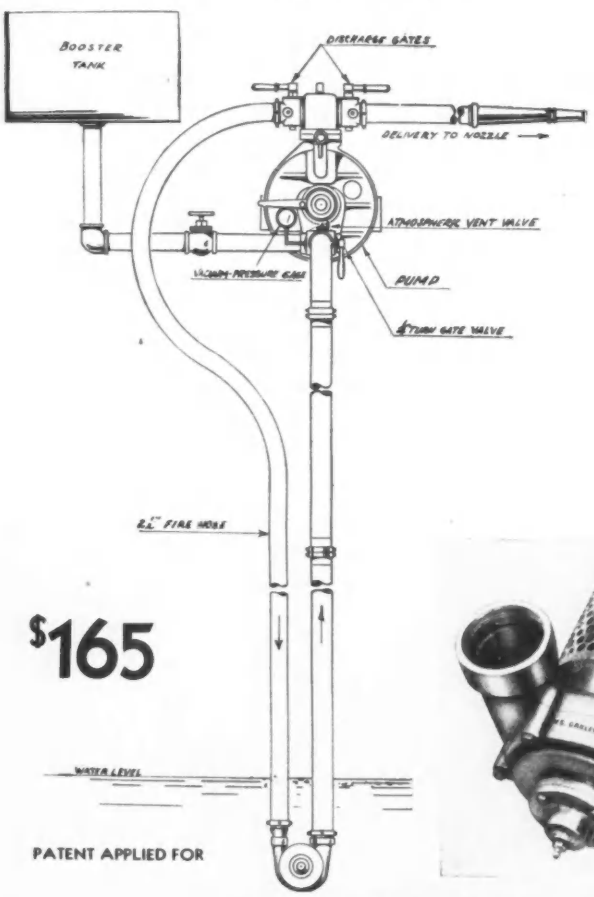
Left. **Simsbury's American LaFrance-International 500 g.p.m. pumper supplying 900-foot line to 1,200-gallon tank truck having 500 g.p.m. OCD pump on rear step (behind men).**

All photos by Commissioner Horace B. Clark, Lost Acres Fire Department



LIFTS WATER 100 FEET

208 GALLONS PER MINUTE!
73 FEET ABOVE and 165 FEET DISTANT FROM THE RIVER!



$165

PATENT APPLIED FOR

CHAMPION Hi-Lift Suction Booster

One of the greatest steps forward in fire fighting since the advent of motorized apparatus.

Makes use of inaccessible water supplies such as hard to get at lakes, streams, ponds, either beyond vertical lift of pumps (20 ft. average lifting capacity) or beyond horizontal reach of roads.

Will lift water vertically in excess of 100 feet and horizontally from a distance hundreds of feet away. Sounds fantastic but the sensational performance of the Hi-Lift Suction Booster has been proved over and over by exhaustive tests.

The actual photograph at the left shows a Hi-Lift in action with a Champion 500 Gallon Pumper, that carries a 200 gallon water tank, charging the Unit (from the tank supply) with 150 lb. pressure and 152 gallon input and the Hi-Lift is lifting 208 gallons per minute for fire fighting. This performance with truck 73 feet above and 165 feet away from the river.

208 gallons of water per minute for fire fighting from an unlimited supply otherwise inaccessible to the largest and most expensive pumper ever built.

Thousands of Fire Departments have large, inexhaustible yet inaccessible water supplies available that from now on may be put to good use with a Champion Hi-Lift.

You can use the Champion Hi-Lift Suction Booster with any make of fire truck having a booster tank of 50 gallon capacity or more.

A 200 gallon tank is adequate for charging the Hi-Lift Booster through 250 feet of 2½-inch fire hose as in the illustration above where the truck is 73 feet above and 165 feet away from the water.

The booster tank automatically refills and is shut off immediately after the Booster is placed in operation.

Complete with easy instructions and performance data so that you can make your own 30 DAY FREE TRIAL TEST and prove to yourself that the Hi-Lift Suction Booster is a good investment in fire fighting efficiency.

W. S. DARLEY & CO.

ESTABLISHED 1908
CHICAGO 12, ILL.

Drillmasters' Field Tryouts

Continued from page 20

two 2½-inch lines with 1-inch nozzles were used at pressures at the pump on the tank truck varying from 45 to 100 pounds, and pressures at the supply pumper varying from 150 to 190 pounds. With 70 pounds at the tank truck pump, one nozzle showed 55 pounds (219 g.p.m.) and the other showed 51 pounds (211 g.p.m.). However, the supply line could not keep up with the rate of discharge and the tank was gradually drawn down.

It was noted that this layout could be used at a fire, permitting use of two good streams at the outset (taking advantage of the 1,200 gallons in the tank). Then as the tank supply became low, the second line could be used intermittently to protect exposures. With a single 1-inch tip discharging at approximately 200 g.p.m., the supply engine at the pond, which was supplying about 265 g.p.m., would gradually refill the tank. It would also have been possible to supply continuously two ¾-inch tips with this layout or even a ¾-inch tip and a ⅞-inch tip each operating at 45 pounds nozzle pressure.

Event No. 3 was the demonstration of various types of fog nozzles. As an ordinary Pitot tube cannot be used to measure the flow from fog nozzles, a water meter was inserted in the hose.

A. The first fog nozzle demonstrated was a high velocity head on a 100-foot line of 1½-inch hose supplied by 120 pounds pump pressure. With approximately 100 pounds at the nozzle, this stream discharged 55 g.p.m.

B. Using a 10-foot Rockwood low velocity applicator with same layout and pump pressure gave 50 g.p.m. discharge.

C. Chief Donnelly, of West Hartford, demonstrated a fog cellar pipe made with four OCD fog heads placed on 2½-inch pipe. This was supplied by two 100-foot lines of 2½-inch hose with the pump operating at 150 pounds. The discharge was 200 g.p.m. (50 g.p.m. for each nozzle). While this nozzle gave a very effective fog, it was felt that a better pattern would be obtained by using six nozzles.

D. A 500 g.p.m. Rockwood fog nozzle, supplied by two 2½-inch lines siamesed into a 12-foot leader line, was operated as a hand line to show the fog pattern.

Event No. 4 was a trial of capacity delivery through a deluge set supplied by the two-pump engine of the Lost Acres Fire Department. The main pump was a Hale 300 g.p.m. rotary and the second pump a Barton 250 g.p.m. front-mount centrifugal. Each pump drafted through 3½-inch suctions and supplied two 50-foot lengths to a four-way deluge set with combined discharge of 462 g.p.m. With a single line from each pump with 1⅛-inch tips, a combined discharge of 488 g.p.m. was obtained.

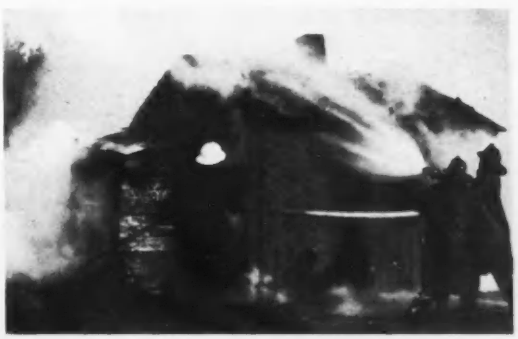
Left to right. **500 g.p.m. pumpers from Lost Acres Fire Depatment in Granby, Avon, and Simsbury, Conn., take suction from pond at Simsbury State Forest.**

Event No. 5 consisted of tests of relay pumping with two 500 g.p.m. American LaFrance-Ford pumpers. The pump at the pond supplied a 1,200-foot line to the second pump which supplied 800 feet to the nozzle. Various sizes of nozzles were tried. Subsequent tests were made with three 500 g.p.m. pumpers supplying 800–800–400 feet of hose respectively. It was conclusively shown that for relay work at rural fires best results were obtained with 1-inch and 1⅛-inch nozzles. The 1¼-inch nozzle imposed too great a load on the pumpers, and it was difficult to obtain a satisfactory nozzle pressure.

Event No. 6 was one of the most spectacular of the day. The Simsbury firemen had built a two-room frame shack, well primed with gasoline and oil. The Avon Volunteer Fire Department, a recently organized outfit, was given the distinction of putting out this fire with two 1½-inch high velocity type of nozzles supplied by the 300-gallon booster tank on the Avon truck. The fire was allowed to burn for four minutes before the Avon boys under Chief Peter Benesio rolled up. Flames were shooting more than ten feet from doors and windows. The Avon men connected their lines and followed the water curtain into the flames putting the fire dead-out in two minutes, and using only 250 gallons of water.

The final series of events was the ex-

Continued on page 24



Two high velocity fog streams on 1½-inch hose put out this house fire with 200 gallons of water.

Below. **Bridge was a water hazard as Commissioner H. B. Clark's two-pump engine delivered 462 g.p.m. to 1½-inch tip of deluge set.**

FEDERAL ELECTRIC COMPANY, INC.
SIREN HEADQUARTERS

How
POWER
is built into this
FEDERAL
SIREN

Flashing Red Light; Chrome Finish; Single or Double Tone; Coaster Model

The tremendously powerful tone of Federal Vehicle sirens demands attention over other traffic noises, clears the way. This model has a distinctive double tone; and it coasts almost two minutes after current is off. Special clutch mechanism releases rotor; coasts much longer than so-called "long roll" types, which seldom roll over 30 seconds. Electric solenoid brake on rotor stops sound instantly.

Durably built for long, dependable, maintenance-free service.

Rotors: cast aluminum, precision-machined, individually balanced. Thin, smooth blades for high efficiency.

Ports in rotor and stator accurately spaced, finished to square sharp edge; assure true pitch, powerful tone.

Motors: heavy duty; bronze or ball bearing; 6 or 12 volts.

WRITE for FREE BULLETINS

Details, illustrations, prices, on this and other FEDERAL Sirens.

FEDERAL ELECTRIC COMPANY, INC.
8717 SOUTH STATE ST., CHICAGO 19, ILL.

Midwestern Combination Suit

Rubber or Canvas

Standard in many Municipal Dept's

All Over America

You can buy either the coat or the pants separately or together. The coat is a highly serviceable garment as a result of rugged and superior quality throughout. Flexible elastic inner sleeve for wrist. Adjustable collar strap, detachable wool lining, Midwestern safety snaps, 2 outside pockets, 6-inch storm flap, and many other good features.

Bunker Pants

- Lining held by snap buttons
- Eight suspender buttons
- Safety snap on belt
- Wool Lining
- Reinforced adjustable belt
- Wide protecting flap
- Reinforced by rivets

Regular Fireman's Boots Available ¾ length, reinforced instep, felt linings. New synthetic rubber, not reclaimed. Write.

See your local Midwestern distributor for prices and literature, or write the factory.

MIDWESTERN
MANUFACTURING CO.
MACKINAW, ILLINOIS

Drillmaster's Field Tryouts

Continued from page 23

tinguishment of oil pit fires involving an overturned tank truck. These fires were generously primed with oil and gasoline.

A. After the fire was burning for 2 minutes 36 seconds it was attacked with two 1½-inch high velocity nozzles delivering 55 g.p.m. each and by a fog nozzle on a ¾-inch booster line. This fire was extinguished in 1 minute and 36 seconds with about 200 gallons of water.

B. The fire was rekindled and extinguished in 37 seconds by two 10-foot fog applicators on 1½-inch lines aided by a 4-foot applicator on the booster line.

C. The fire was rekindled and extinguished in 17 seconds by two high velocity nozzles on 1½-inch lines.

D. As the "grand finale," fires were started simultaneously in both the building and the oil pit and tank truck. When the Avon truck rolled in with its 300-gallon water tank, the two fires were burning furiously. Using a 1½-inch fog applicator on each fire, the firemen extinguished the building fire in 1 minute 42 seconds and the oil fire was out in 1 minute 10 seconds. All times reported included the laying of lines from apparatus and making connections.

•

Edge Hill Fire Company

Continued from page 9

1½-inch and 2½-inch hose on booster hose in tower or hose taken out of service. Any hose that has been slightly damaged or repaired and then tested, or if it has blown out — this information is printed on the card, thus giving the l fe history in detail. This data may well be the deciding point when new hose is to be purchased.

•

Trained Fire Departments are Essential to Industry

Continued from page 11

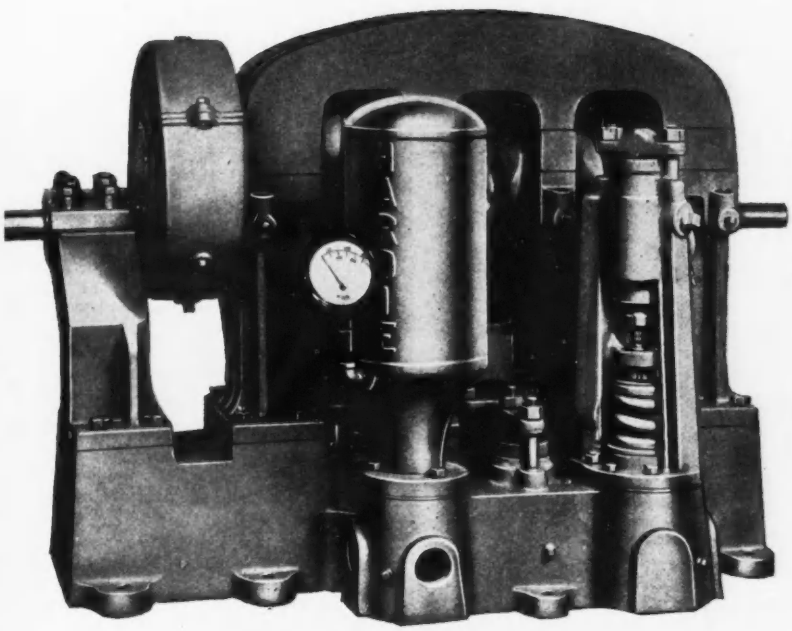
establishments and all war plants found it necessary to go beyond ordinary requirements and add sufficient trained personnel and fire protection equipment as a prime necessity. This became the number one item in the internal security program. The experience during World War I, such as the Black Tom disaster and several others, taught the authorities a valuable lesson.

It must be admitted that even now some small plants are negligent, that they are literally sitting on a powder keg. It is to be hoped that they will not have to learn the hard way.

Nevertheless, the ground gained is vast and much over-all good has been accomplished, millions of dollars worth of property saved and thousands of lives spared. The trained fire departments have established a secure position of respect and prestige.

800 P.S.I.

A Hardie high pressure swivel is supplied for use where 1" chemical hose connection is desired. Base casting of gun is fitted with female ¾" thread.



● This Hardie Imperial LCXA pump delivers 60 gallons per minute with 800 P.S.I. at 130 R.P.M. The Hardie Imperial XCXX pump delivers 35 gallons per minute with 800 P.S.I. at 118 R.P.M. These great Hardie pumps and the perfected Hardie Fog Fire Gun assure the most efficient and economical application of fog fire control. Hardie pumps and guns are available in the complete trucks and rebuilt units supplied by many leading fire control equipment manufacturers. Specify Hardie pumps when you buy new or modernize old trucks. Specification data on request.

THE HARDIE MFG. COMPANY

Hudson, Mich. Los Angeles, Calif. Portland, Oregon

Canadian Distributor C. W. LEWIS, Grimsby, Ontario

★H★A★R★D★I★E

High Pressure **PUMPS AND FOG GUNS**

for Fog Fire Fighters

REAL PROTECTION AGAINST ASPHYXIAL DEATH

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The E & J RESUSCITATOR INHALATOR and ASPIRATOR

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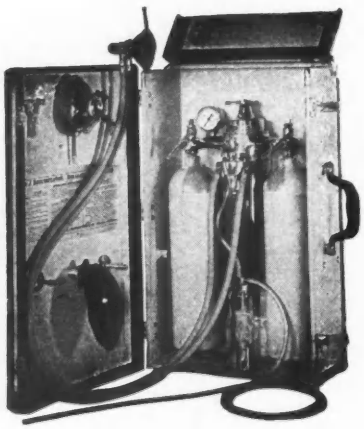


YOUR COMMUNITY NEEDS THIS SERVICE

The E & J Resuscitator enables you to treat EVERY case of Asphyxia safely and effectively. Severe burns, broken back, fractured ribs, internal injuries, pregnancy, etc., are no hindrance to successful and safe artificial respiration when you employ this modern automatic breathing machine. It is now being used in a large majority of the leading industrials, hospitals and fire departments.

YOUR RESCUE SERVICE IS NOT COMPLETE WITHOUT MECHANICAL RESUSCITATION — AND THIS MEANS "E & J" IF YOU WANT THE BEST

E & J MANUFACTURING CO.

GLENDALE, CALIFORNIA

Pioneers and Specialists in Mechanical Artificial Respiration

Drexel Bldg. Philadelphia	17 E. 42nd St. New York	2144 N. Springfield Ave. Chicago	581 Boylston St. Boston
530 Fernando St Pittsburgh	3032 W. 25th Ave. Denver	3900 Grandy Ave. Detroit	5005 Euclid Ave. Cleveland

Our Readers Say—

Dear Sirs:

Our department was called to a fire in an old log house just outside town. The lady was fumigating a room with a sulphur candle. The wartime sulphur candle has no metal band or case around it. On actual tests, it "flicks" pieces of hot and, in some cases, burning sulphur several feet around it.

The lady was expecting smoke from the candle and did not realize her house was on fire until the room was completely involved. She said she heard a sharp crack but did not think anything unusual was happening until too late.

When we were called, the entire log cabin was ablaze and nothing could be saved because of inadequate water supplies (outside of town).

These candles should only be used when complete protection against "flicking" is provided. (Something like a brooder house with tin under the candle, several feet around.)

ROGER W. DOLDER, *Chief*,
Frazeysburg, Ohio, Volunteer Fire Department.

Gentlemen:

There is a condition that is becoming quite acute and it would be our suggestion that this matter be discussed in an article or discussed by reports from various fire departments.

More and more of the smaller communities are using booster pumps with tanks on the truck. These tanks range from 100-gallon capacity on up to over 1,000-gallon capacity. We feel that there is a practical limit to the booster tank size and also feel that it would be to the advantage of the various fire departments if the facts of this matter were brought more generally to light. The main purpose of the booster tank is to have water available on rural fires. We feel that a fire that cannot be put out with 300 to 400 gallons of water is usually so far gone that the efforts should be directed to saving surrounding buildings. Fire departments should be educated to use small tips and conserve water when working from booster tank. One of the main factors is weight, as the weight of one gallon of water, including tank, is about ten pounds, so that 500 gallons represent better than two tons on the truck. Most of these rural trucks are one and a half and two-ton capacity, so that if they are badly over-loaded, the result is a greatly reduced road speed that means a longer time required to get to the fire. We can build tanks to any size required but really do not like to put out apparatus with over 500-gallon capacity tanks and, in most cases, feel that 300 to 400 gallons is sufficient.

If this is of interest and you desire any additional information, we would be pleased to furnish it.

American-Marsh Pumps, Inc.
W. E. STOREY, *Advertising Dept.*

Not an N.F.P.A. Member of course . . . .

Reprint from *Canadian Insurance*

THIS might be funny if the same potential situation didn't exist in hundreds of communities. Defective wiring set a building on fire. The fire was discovered before it had made much headway.

There was no city water in the place, the fire truck had a flat tire on it, and the engine wouldn't start anyway. The department pushed the truck to the fire. When the fire was almost extinguished they ran out of chemical.

A fire detachment from a neighboring town came, pumped well water on the fire and had it almost out when the well ran dry. In moving the truck to the courthouse well, the wheels stuck in the mud, and it took an hour to extricate it. The fire got out of control and destroyed the building.

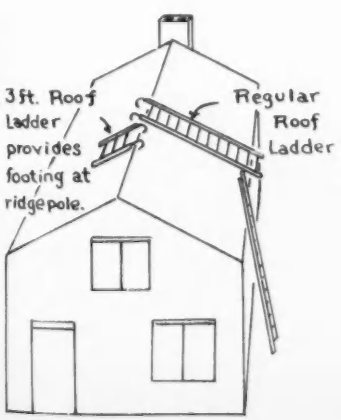
The report on this incident says: "This makes the fourth total loss in this small town within the past year, and in each case the loss would have been small if any fire protection had been available. The fire truck and hose were completely worn out."

Roof Work Made Easier

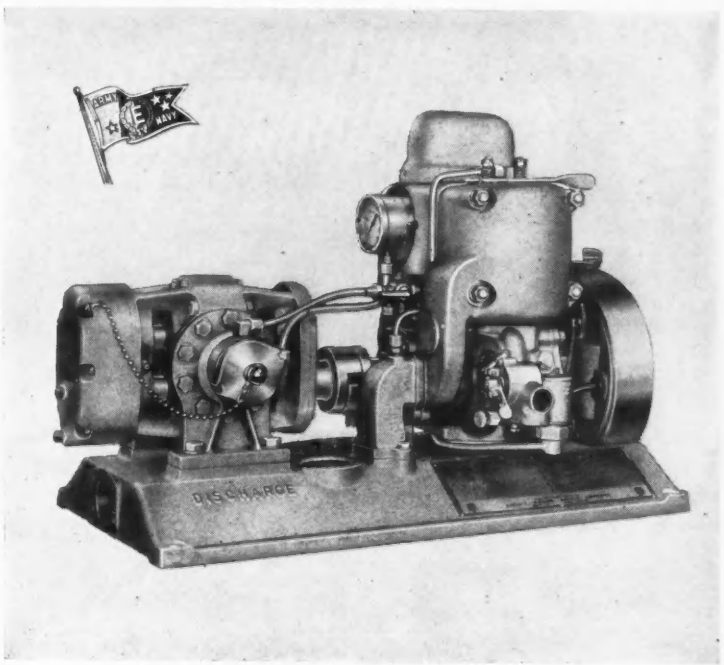
DOING axe work near the ridgepole of a house is sometimes a difficult job, due to the difficulty of maintaining a secure footing, particularly when weather conditions are unfavorable.

This problem has been solved for the volunteer firemen of Dover, Delaware, by the ingenuity of Fire Marshal Thomas E. Baker, N.F.P.A. member.

An old roof ladder was cut down to a three-foot length, and whenever the Dover firemen are doing roof work, the short roof ladder is placed on the opposite side of the roof from the regular ladder. This provides excellent footage for an axeman working near the peak of the roof.



TYPE "Y" *Portable Pumper*



For weight and size, Pacific Marine Type "Y" is the most powerful portable pumper yet built. Base 24 x 12 inches; height 13 inches; net weight complete, ready to operate, 70 pounds.

CAPACITY

Pressure	100	125	150	175	200	225
Gallons per Minute	63	59	53	46	40	20

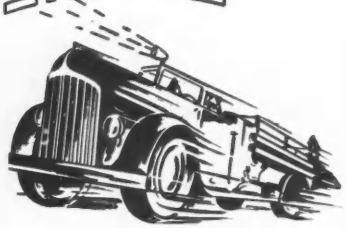
We are now able to make prompt delivery of Type "Y" and Type "NY" Pumpers, accessories and general fire-fighting equipment.

FIRE-FIGHTING EQUIPMENT DIVISION of the

PACIFIC MARINE SUPPLY COMPANY

SEATTLE, Washington

SIRENO



THE SIREN THAT CLEARS THE WAY

PRECISION MADE—THE UTMOST IN DEPENDABILITY AND LONG LIFE

SEND FOR CATALOG VF

First Aid Fire Appliances

3. Vaporizing Liquid Extinguishers

APPROVED vaporizing liquid (carbon tetrachloride) fire extinguishers are made in several principal sizes having liquid capacity of 1, 1¼, 1½, and 2 quarts and 1, 2, and 3 gallons, respectively. The extinguishing agent used is a specially treated non-conducting liquid having a carbon tetrachloride base with important components for depressing the freezing point to 50° F. below zero and for avoiding corrosion.

Operation

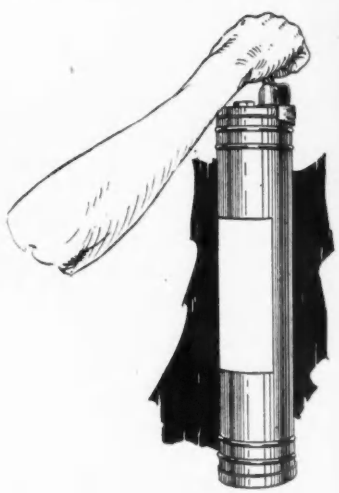
Extinguishers are designed to be carried to the fire and used in accordance with the instructions which are prominent on the extinguisher. This action expels a stream of liquid which is vaporized into a gas by the heat of the fire. While the stream is usually most effective if used close to the fire, in case of necessity it can be directed from a distance of approximately twenty to thirty feet horizontally (varying for different types and for different methods of operation).

On all fires the stream should be directed at the base of the flames. On flammable liquid fires, best results are obtained when the discharge from the extinguishers is played against the inside of the wall of the container, just above the burning surface, so as to break up the stream near the burning surface — the stream should *not* be directed into the burning liquid. Where possible, the operator should walk around the fire while directing the stream, in order to get maximum coverage during the discharge period.

Suitability

These appliances are effective on fires in small quantities of flammable liquids, greases, in vats or other open vessels or on floors and on other Class B fires, where the gas formed by the vaporization of the extinguishing liquid may be retained as a blanket on the burning material.

They are effective on incipient fires in electrical equipment (Class C fires), where a non-conducting extinguishing agent is of importance.



Remove extinguisher from wall bracket by grasping handle and pulling outward. On way to fire, unlock handle by turning. If device is of air pump type, hold finger over nozzle and pump up pressure. Direct stream at base of flames and work around fire rapidly. If fire is in a container or tank, direct stream against inside opposite wall above level of burning liquid.

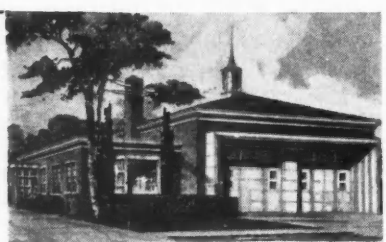
They are adapted for use on automobiles, motorboats, etc.

They are not effective on deep-seated fires of ordinary combustible materials such as wood, paper, textiles, rubbish, etc., which require the quenching and cooling effect of water for complete ex-

Continued on page 30

Better FIRE STATIONS *with* CIRCUL-AIR

THE AIR-CONDITIONING



FIRE HOSE DRYER

It's "post-war" **now,** and we're sure you want your new stations to be of **Modern Design** . . . simpler, streamlined houses in keeping with the times . . . with better lighting, heating, adequate alarm systems, finer apparatus and faster **Hose Drying.** In eliminating the costly, ugly hose tower of the "gay 90's" **CIRCUL-AIR** improves building appearance and lowers construction cost. Efficient and practical for large central stations, they are ideal for "bungalow" type houses, for villages, townships and fire districts where time-saving, space and costs are decisive factors.

for OLD STATIONS *too!*

Without adequate drying equipment, or with towers in need of repairs they are most economical and efficient. Cheaper than a tower, more compact than a drying rack, faster and easier to use than either.

ASK A CHIEF WHO HAS ONE

Or Write for Descriptive Booklet

The CIRCUL-AIR Corporation
6339 East Palmer Avenue
DETROIT 11, ◆ MICHIGAN

FOAM FOUGHT KAMIKAZES
—and Won!

Jap Kamikaze diving on carrier. How foam blanket quickly extinguishes serious fires aboard ship. Arrows point to cans of easily applied "bean soup"

Official U. S. Navy Photo

National's Aer-O-Foam which helped save Navy Carriers, now ready for all industry.

The U. S. Navy used foam (developed and largely supplied by National Foam System, Inc.) to quickly extinguish sudden, serious fires set by Jap suicide pilots. It is now available to private enterprise—with particular emphasis in the petroleum, chemical, aviation and other industries.

Fires in peacetime can start as unexpectedly and prove as disastrous as those set by Kamikazes. But with foam now available to all industry as a thick, tough and enduring blanket quickly smothering fire, industrial properties can be saved as surely as were our carriers by Navy "bean soup".

National Foam clings to vertical surfaces as well as horizontal, insulating threatened areas as thoroughly as it lays a gas-tight blanket over flames—quickly extinguishing fire and preventing flashbacks.

Wire, telephone or write today to learn how you can guard your property from fire as effectively as National Foam helped Uncle Sam protect his Navy.

IN FIRE DEPARTMENT SERVICE

National Foam System has equipment especially designed for use of Fire Departments to meet all types of foam fire fighting requirements.

NATIONAL FOAM SYSTEM, INC.

SPECIALIZING IN FOAM-FIRE PROTECTION

Packard Building. Philadelphia 2. Pa.

Send PROVED PROTECTION ALONG WITH YOUR MEN

THE M·S·A
All-Service
GAS MASK

(U. S. BUREAU OF MINES APPROVED)

You are best equipped to meet gas and smoke conditions encountered by your men when you have the famous M.S.A. All-Service Mask to rely upon! Easily put on and quickly adjusted, comfortable to wear, and efficient in protection against smoke and all gases, including carbon monoxide, the Model "S" All-Service Gas Mask features the *All-Vision* Facepiece (pictured in illustration with Speaking Diaphragm) for maximum vision; automatic timer; lightweight harness, and other design advantages—detailed in Bulletin EA-8, sent promptly on request.

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS AND MEADE STS.
PITTSBURGH 8, PA.
District Representatives in Principal Cities

N. F. P. A. Volunteer Firemen's Section

MEMBERSHIP REPORT

MEMBERSHIP PLAN

● Through the Volunteer Firemen's Section, fire companies may become members of the National Fire Protection Association. As a member fire company, the department receives at headquarters a set of all regular N.F.P.A. publications. This includes the Quarterly, the monthly News Letter, posters and bulletins.

● Each member fire company has the Volunteer Firemen magazine sent to the homes of ten men at no extra charge beyond the ten dollars annual dues paid by all associate members of the N.F.P.A. All other N.F.P.A. members pay ten dollars without the ten copies of Volunteer Firemen.

● If more than ten firemen want to receive Volunteer Firemen, an additional dollar should be sent for each extra fireman listed to receive the magazine. Individual subscriptions are not accepted from departments not members of the N.F.P.A.

THE twenty new members of the Volunteer Firemen's Section are listed below:

Loma Linda Fire Dept., Loma Linda, Calif.
Patterson Fire Dept., Patterson, Calif.
Brookfield Volunteer Fire Co., Brookfield, Conn.
Poquonnock Bridge Volunteer Fire Dept. No. 1, Poquonnock Bridge, Conn.
Milton Volunteer Fire Dept., Alton, Ill.
Galena Volunteer Fire Dept., Galena, Kansas.
La-Vale Volunteer Fire Dept., Inc., LaVale, Cumberland, Md.
Hull Fire Dept., Nantasket Beach, Mass.
Cairo Volunteer Fire Dept., Cairo, Nebr.
Beachwood Volunteer Fire Co. No. 1, Inc., Beachwood, N. J.
Winfield Volunteer Fire Dept., Winfield, N. J.
Baldwinsville Fire Dept., Baldwinsville, N. Y.
Northville Firemen's Association, Northville, N. Y.
East Palmyra Fire Dept., Palmyra, N. Y.
Springville Fire Dept., Springville, Erie County, N. Y.
Croydon Fire Co. No. 1, Croydon, Pa.
Gouglersville Fire Co. No. 1, Gouglersville, Pa.
Halifax Fire Company No. 1, Halifax, Pa.
Kennydale Fire Dept., Kennydale, Wash.
Richmond Volunteer Fire Brigade, Richmond, Quebec, Can.

●

First Aid Fire Appliances

Continued from page 28

tinguishment, but they may be of value for surface fires in small quantities of such material where the smothering effects of the gas may be utilized.

Extinguishers which are pump-operated can be discharged intermittently, but the force, length and duration of the stream are dependent upon the operator. The 2- and 3-gallon ones are not readily operated while being carried about. Under average usage, the liquid will be completely discharged in ¾ of a minute of continuous operation for the smaller sizes to 2½ minutes for the largest size. The 1- and 1¼-quart extinguishers are readily handled by women. The 1½- and 2-quart extinguishers are intended for use largely in industrial establishments.

The 1-, 2- and 3-gallon appliances are intended for use largely in electrical

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"Do you think the fire department would be needing to get in here in the next five or ten minutes?"

power stations and in industrial establishments where persons of ample strength, usually men, especially instructed in their use, will employ them.

In using extinguishers of this type, especially in unventilated spaces, such as small rooms, closets, or confined spaces, operators and others should take precautions to avoid the effects which may be caused by breathing the vapors or gases liberated or produced.

These appliances when charged with the specified liquid do not need to be protected against freezing.

Distribution

Two of these extinguishers are considered as a unit for use on Class B fires. One 1-, 2- or 3-gallon or two of the smaller sizes are considered as a unit for use on Class C fires.

Extinguishers shall be conspicuously located where they will always be readily accessible and so distributed as to be immediately available in event of fire. They shall be hung in the special brackets supplied with the extinguisher so that the top of the extinguisher is not more than 5 feet above the floor for the smaller devices, and 3½ feet for 2- and 3-gallon devices.

Maintenance

At regular intervals — several times a year — extinguishers shall be examined to make sure that they have not been tampered with, nor removed from their designated places; to detect any injuries; to see that they are full; and to see that the orifice of the nozzle is not clogged.

At least once yearly the extinguishers shall be examined as to condition of pump or pressure and for deterioration or injuries due to misuse. At these inspections all pumps shall be tested by discharging a portion of the liquid with the stream directed alternately upward and downward. Extinguishers which are not in good condition shall be replaced; others should be refilled by pouring in enough liquid to replace that which was discharged. Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

In every case where extinguishers of this type are employed, there should be kept on hand a quantity of the special fire extinguishing liquid supplied by the manufacturer for use in such extinguishers, so that extinguishers may be promptly recharged after use. Liquid other than that furnished by extinguisher manufacturers should not be used in these extinguishers, because it is liable to render the extinguisher inoperative or make it dangerous for use.

Caution — Do not use water for any purpose in extinguishers of this type.

ORDER

INDIAN FIRE PUMPS

NOW!

Now is the time to check over your supply of these "one man fire departments" and see how many you need to be fully equipped. Hundreds of professional fire fighters can't be wrong when they say no other piece of fire fighting apparatus gives them so much service.

THEY USE ONLY CLEAR WATER

NO CHEMICALS NECESSARY

Clear water alone does the job — no chemicals to bother with. Big, rust-proof 5 gal. tank carries on the shoulders or by carrying handle. Pump throws powerful 30 to 50 ft. pressure stream or nozzle adjusts to fine or coarse spray. Letters like the one below are our best advertisement.

Send for catalog and price list

D. B. Smith & Co.
Utica, N. Y.

Our department has 6 **INDIAN FIRE PUMPS** and all the firemen are well pleased with them. Since equipping with **INDIANS**, we have discarded our soda-acid extinguishers. When called out to a fire the first thing the men grab are your **INDIAN FIRE PUMPS** and they certainly **do a swell job.**

Yours very truly,
NATRONA VOLUNTEER HOSE COMPANY

D. B. SMITH & CO.
411 MAIN STREET, UTICA 2, N. Y.
Pacific Coast Branch
Hercules Equip. & Rubber Co., 435 Brannan St., San Francisco, Calif.

Send for Catalog

HONOR YOUR SERVICE MEN

WITH A PERMANENT Roll of Honor

— a lasting tribute to your boys now returning from service. Have it on the wall when they come home. Beautiful walnut plaque with Eagle and victory torches. Individual names in silver on gold-bordered permanent name plates. Sizes for any number of names. Write today for illustrated price list.

U. S. FLAGS

— now available in any size desired. All types of materials. Also flag sets, standards, etc. Tear out this ad and write for free price list today.

REGALIA MFG. CO.

Dept. 82, Rock Island, Illinois

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When you write to advertisers, please mention VOLUNTEER FIREMEN

MANUFACTURERS' ANNOUNCEMENTS

New Self-Contained Breathing Apparatus Announced by Scott Aviation Corp.

The Scott Aviation Corporation, of Lancaster, New York, has announced the introduction of a revolutionary type of breathing apparatus with a wide variety of fire fighting, emergency, and work applications.

Called the Scott Air-Pak, it literally had its inception in the battleskies. Throughout the war and for our principal Allies, Scott has manufactured demand-type regulators for use with portable oxygen equipment in high altitude flying. This equipment, popularly known as the "walk-around bottle" permitted flying personnel to leave their stations in military aircraft and take up other duties in different parts of the airplane.

Over two years ago, Scott recognized the vast field which existed in fire fighting and general industrial use for a type of breathing apparatus utilizing normal breathing air — not oxygen — which could be stored under pressure in a compressed air cylinder, with the result that pure breathing air was carried to the hazard and not drawn and refined at the scene.

The Scott Air-Pak, according to company officials, offers such advantages as its Quick-Connect, which permits the wearer to breathe through the open end of the low pressure face mask hose until entering the danger zone, thus conserving the air supply for actual use under working conditions. This feature is believed not available in any other breathing equipment today.

The Scott Air-Pak utilizes the well-known Willson mask, since this type face set has been found to give the best possible service with the apparatus. The Willson mask includes among its features shatter-proof lenses cushioned in rubber designed to allow full unobstructed vision in all directions. The fresh, cool, breathing air drawn into the mask eliminates all lens fogging and the completely efficient exhalation valve prevents the accumulation of dangerous gases inside the mask.

The demand-type regulator is for all intents and purposes the same as that employed by the Army and tested through hundreds of thousands of hours under extreme service conditions. Integral with the demand-type regulator is a pressure gauge showing the exact amount of air remaining in the compressed air cylinder at all times. This gauge is furnished with luminous figures and can be readily seen under all normal working conditions.

The harness of the Scott Air-Pak is made of neotexed cotton webbing 2½ inches wide and equipped with snap hooks and self-locking slide buckles.

There are two types of compressed air cylinders utilized in the Scott Air-Pak: the back pack model can be installed in three or four minutes' time on the comfortable contoured aluminum back-plate. This can even be done on the back of the wearer for the interchange of cylinders in less than three minutes' time. The compressed air cylinder has an integral pressure valve which indicates the exact air pressure remaining in the cylinder and prevents using a cylinder from which the air has already been drawn.

The sling-type Scott Air-Pak includes all the features of the back pack model but is preferred for chemical laboratory work and for instant use in all areas where breathing hazards exist. It is ideal equipment for factory installation at fire fighting stations. Special wall cases for permanent installation are available for these applications.

The Company has prepared an eight-page illustrated booklet covering all features of the unit and describing generally its wide application for both fire fighting and industrial use.

Four-Wheel and Single-Drive Principles to Be Studied by University

A five-year research program to determine the safety, performance and range of operation of four-wheel drive and single-axle drive vehicles together with their effect on roads and streets, will be undertaken by the College of Engineering of the University of Wisconsin, according to a recent announcement by university officials. The investigation has been made possible by a $50,000 fund established by the Four-Wheel-Drive Auto Company of Clintonville, Wisconsin. Previous investigations dealing with the efficiency of the four-wheel drive principle were conducted nearly fifteen years ago by Purdue and Iowa State Universities. Many thousands of returning servicemen are today familiar with all-wheel drive which has been employed in military vehicles from the tiny jeep to the huge "six by sixes." The results of this research will be of interest to fire department officials, particularly in communities where steep hills, winter snows, or unpaved roads present traction problems for fire apparatus.

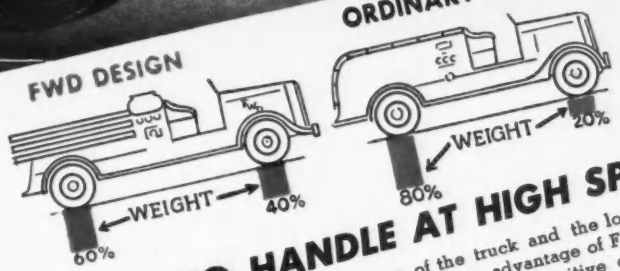
National Foam Is Producing Again for Civilian Markets

National Foam System, of Philadelphia, which has completed the delivery of over 4,000,000 gallons of Aerofoam liquid (which makes 600,000,000 gallons of fire smothering foam) to the U. S. Navy, has now turned to full-time civilian production of both dry powder and mechanical foams. With no reconversion problem to delay changing over to peacetime production, the company has its foam products again on the civilian market for extinguishing industrial, petroleum, maritime and aviation fires.

FWD's FIRST

in Speed
in Safety
in Power

EASIER TO HANDLE AT HIGH SPEEDS



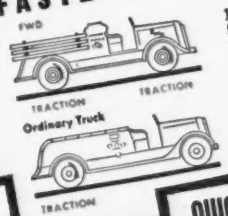
Properly balanced weight distribution of the truck and the load on all four wheels of FWD Fire Trucks, is an outstanding advantage of FWD design and basically balanced construction, which provides positive driver-control at even the highest speeds. In any emergency, FWDs handle perfectly. The weight distribution to front axle is used in powered traction for greater safety and increased performance. Speed, safety and power count in fire fighting apparatus. FWDs have *all three* at their best! WRITE FOR LITERATURE.

THE FOUR WHEEL DRIVE AUTO COMPANY, Clintonville, Wis.

Canadian Factory: KITCHENER, ONTARIO

FWDs Go Where Other Vehicles Fail
NO ROADS TOO TOUGH OR STEEP FOR FWDs

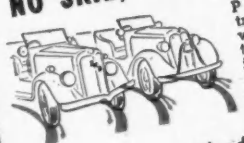
FASTER GET-AWAY



FWD power on all four wheels gets a four-way grip on any road and assures faster get-away.

Other designs, lacking drive on front wheels, lose time in get-away.

NO SKID, NO SLIP, NO SLUE!



Powered steering traction holds front wheels to direction of turns, thus minimizing skid-danger. Skidding tests conducted on ice show 50% less skidding.

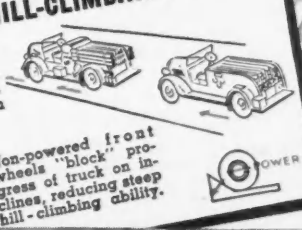
FWD... non-skid.

Other designs more liable to skid.

QUICK, POSITIVE, SAFE EMERGENCY STOPS

FWDs have two separate and independent 4-wheel braking systems, with brake drums on each wheel. Combined with properly balanced weight distribution, these provide the most effective braking possible.

GREATER HILL-CLIMBING ABILITY



FWD's front wheel pulling power increases hill-climbing ability. Reserve traction in all 4 wheels.

Non-powered front wheels "block" progress of truck on inclines, reducing steep hill-climbing ability.

FWD

FOUR-WHEEL-DRIVE *Fire Apparatus*

GETS TO FIRES FASTER and SAFER!

FAST ATTACK! YOU CAN MOVE IN FAST WITH FMC HIGH-PRESSURE FOG!

No Delay! You are Ready to "Go" the Moment You Arrive at the Fire

The FMC High-Pressure Fog Fire Fighter carries its own water supply and complete fire fighting equipment. So — you are ready for instant action.

There are two fog guns of 30 gallons each at 600 lbs. or more nozzle pressure. The flow of these guns can be adjusted to produce any type of fog formation that may be needed — from a wide, dense fog pattern to a straight power stream.

It's the Pressure and the Pump!

The FMC High-Pressure Pump — built by Bean — packs the needed punch to produce and maintain *800 lbs. pump pressure*— better than *600 lbs. nozzle pressure.*

The high-pressure provides a combination of high velocity and finely atomized water — just what you need to *blast, cool* and *smother* flame.

One gallon of this steam-like water fog, properly used, has fire quenching possibilities many times that of low pressure water.

Restrictions Lifted!

Investigate this revolutionary method of fire fighting. It's not a bit too early to start plans for the modernization of your department.

FMC High-Pressure Fog Fire Fighters may now be purchased for civilian use. Orders should be placed promptly to insure early delivery.

YOU CAN MODERNIZE — NOW!

Illustration shows latest type Standard FMC Fog Fire Fighter.

FMC *Original* HIGH-PRESSURE FOG FIRE FIGHTER

CAN BE MOUNTED ON MOST STANDARD TRUCK CHASSIS

FOOD MACHINERY CORPORATION

JOHN BEAN MFG. CO. 726 HAZEL ST., LANSING 4, MICH. : BEAN-CUTLER DIVISION, 426 JULIAN ST., SAN JOSE, CALIF.

BUILDERS OF BEAN HIGH-PRESSURE PUMPS FOR OVER 60 YEARS

AKRON APPARATUS ANGLE ELBOW

Use of the Akron Angle Elbow offers several important advantages. It equalizes the strain on the hose—reduces the time of making hose connections—increases hose laying efficiency by as much as 100 per cent.

The elbow swivels to right or left, and by equalizing strain on the hose it prevents cracking—greatly lengthening the life of the hose.

Made only for 2½" hose lines.

This illustrates elbow attachment of hose to apparatus in contrast with straight attachment.

AKRON BRASS MFG. COMPANY, Inc., WOOSTER, OHIO

AKRON BRASS

FIRE FIGHTING EQUIPMENT

CARBON DIOXIDE CD/Fog

DESTROYS FIRE BY "FREEZING" ACTION

15-LB. SIZE

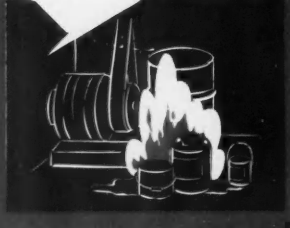
Using a one-two punch to knock out dangerous fires, CD/Fog smothers and "freezes" flame in one swift action. Its frigid blast of carbon dioxide envelops the blaze, shutting off the oxygen necessary for combustion. Equally effective at temperatures of 120° above or 40° below zero. Finger Tip control gives split-second action. Available in sizes ranging from 2 lbs. to 100 lbs.

WHERE TO USE CD/Fog

Quickly effective on Class B and C fires (Gasoline, oil, electrical, flammable liquid, grease, illuminating gas, paint).

HOW TO USE CD/Fog

Carry close to fire. Hold horn with end hand. Open valve wide. Direct at base of fire and gradually blanket entire area.



IF IT'S GENERAL IT'S DEPENDABLE

Remember—you need fire extinguishers in your home and that hard-to-replace automobile

Let General Protectioneers prescribe the right extinguisher for your every fire hazard.

THE GENERAL DETROIT CORP.

2270 E. JEFFERSON AVE., DETROIT 7, MICH.

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